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THE FAR EASTERN REVIEW

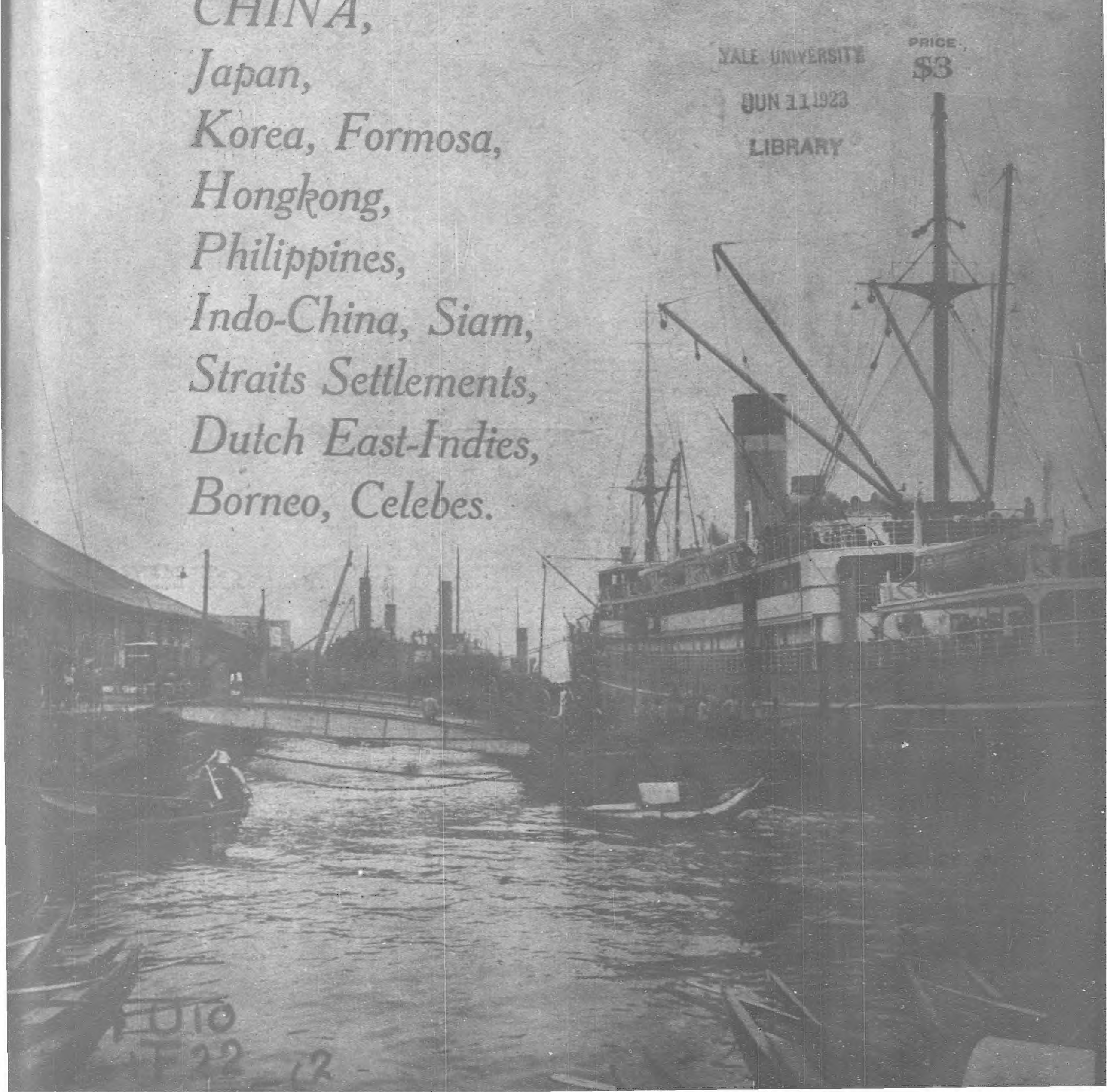
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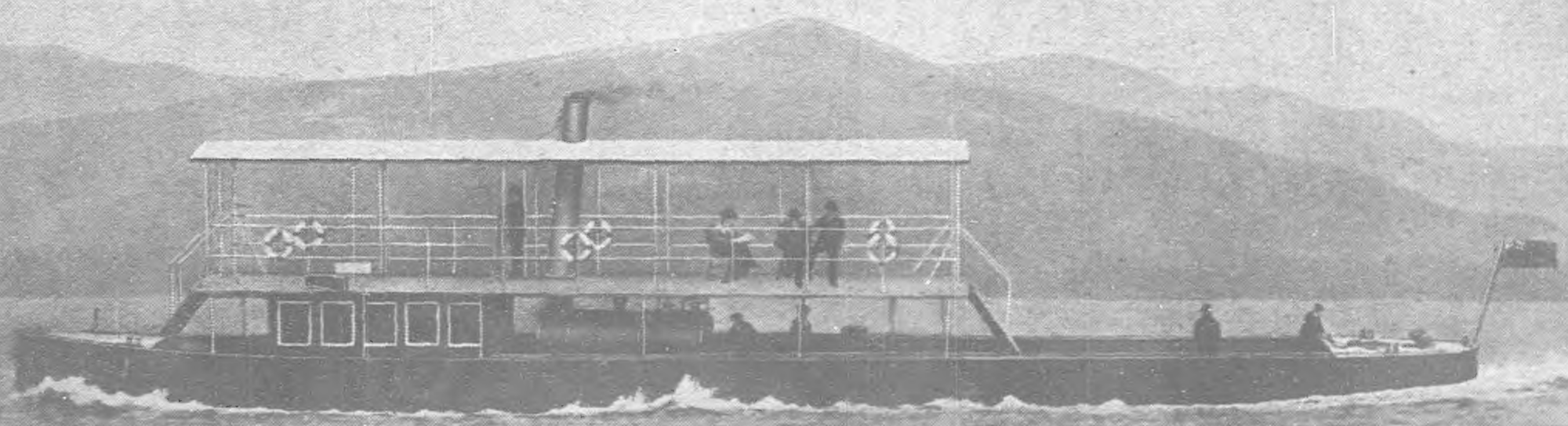
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The Far Eastern Review

PORTS OF THE ORIENT NUMBER

VOL. XV SHANGHAI, FEBRUARY, 1919 No. 2

THE FAR EASTERN REVIEW is being issued this month as a special number with the object of supplying the most up-to-date facts procurable concerning the trading ports of the Far East. Such information will be required by all interested in the great commercial campaign which will begin with the signing of peace and the reorganization of the vast industries and enterprises whose energies have for some years past been diverted from peaceful pursuits to the stern necessities of war. Since 1914 normal trade and commerce throughout the world have been dislocated. Manufacture for export practically ceased in Great Britain and France the day those powers went to war. America's supplies for other than European markets became shorter and shorter as the war drew on, and long before she entered the lists against Germany her great factories were virtually all engaged solely on work for the Allied armies. The advent of America as a protagonist altered things completely as far as her outside trade was concerned. "Win the War" was the battlecry. Supplies for the Far East, among other regions, simply practically ceased, and no factory could undertake the production of any special order for this section of the globe unless such could be proved to be for the purpose of furthering the objects of the Allied campaign The Central Powers were, of course, swept off the oceans so far as trade is concerned within a few days of the declaration of war by Great Britain, and ceased to count as commercial factors.

It is a matter of history that the great Allied Powers and America confined themselves solely to the defeat of the Central Powers from the moment they conceived it their duty to take up arms. With transcendent singleness of purpose Great Britain began to divert her great maritime marine for war purposes immediately the solgan sounded, and before a year was out she was abandoning trade routes which she had developed and held for many decades, if not for centuries. France likewise went out of the market as a general transporter, and—a phenomenon of the war—America leaped into the breach as a magical creator of a mercantile marine where practically none previously existed. The call for the greatest sacrifice was met to the full by all the Allied nations who realized what the failure to overthrow the so-called "kultur" of Germany would mean to the free peoples of the world, and that sacrifice in commercial transactions, to say nothing of life and treasure, was a tremendous one. Japan alone of the manufacturing and mercantile nations was able substantially to profit by the war, and to maintain her mercantile services and even expand them. So far as the Far East is concerned she has been the chief carrier remaining in business, but even her ships were unable to cope with demands.

With the complete cessation of war and coincident with the work of reconstruction necessary in France and Belgium will come strenuous effort on the part of the big commercial nations to recoup, and it is inevitable that most attention will be directed to the great potentialities of China. For this reason we have devoted more attention to supplying information concerning China than any other country in the Far East. With her untold wealth spread over her four million square miles of territory, her tremendous industrious, settled population, her undeveloped natural resources and her general accessibility by sea, China offers a vast market, both as an exporter of raw materials and a purchaser of manufactured products and machinery. In separate special articles in this issue aspects of this nature are dealt with, and information is also given with regard to each trading port in the country. The era of development which is dawning in China will be a great one. For some years the country has been disturbed by the turmoil contingent upon a radical change of government, but with the ending of the European war, and the consequent change in world policies China will undoubtedly come into her own. Factions who have been fighting will be brought into line, and a stable government pledged to the proper development of the country will ultimately be installed. With the adjustment of internal difficulties, and the inauguration of a sound administration, reforms will be instituted calculated to make for remarkable changes, and a fillip will be given to trade and commerce of an extraordinary character, provided, of course, that the foreign Powers most interested in China, will see to it that she is given every opportunity to reform and reorganize.

With such sympathy and aid the condition of the people of China should improve beyond the dreams of the most optimistic of a few years ago, and *pari passu* with general amelioration must come a great and far-reaching advance in purchasing power. Already the Chinese are reaching out for western products of all kinds; a great demand has set in for machinery of all types, and with the general organized promotion of industrial concerns and the opening of mines, combined with the extension of railways, the improvement of harbors and waterways, the construction of highways for motor and general vehicular traffic, all of which are now afoot, there will be tremendous scope for activity in all branches of commerce, trade, and industry.

While China is the outstanding potential market in the Far East there are others which will attract considerable attention in the immediate future. To meet inquiries in this direction we have given the latest data available concerning Japan, Hongkong, the Philippines, Indo-China, the Straits Settlements, Siam, Java, Borneo, and the Celebes. War conditions have made it difficult to secure the whole of the information required, notwithstanding that we have delayed publication several months, but in future issues of the FAR EASTERN REVIEW particular attention will be paid to commercial and industrial developments in the spheres included in this work.

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Influence of Port Development Upon Commercial and Industrial Progress

By Paul Page Whitham.*

A compilation of truisms familiar to every one but adhered to by few

The word port, meaning gateway, in the sense it is used to designate a harbor equipped with shipping facilities, means a water or marine gateway. The marine gateway is the portal through which passes traffic to and from the land and water sides.

At first thought, it might be said that a gateway does not add to or subtract from the traffic passing through it, except that perhaps being an attractive portal, it may draw from other gateways less favored. The traffic, generally speaking, originates on either side of the gateway and its volume is dependent on the productivity and resources of the hinterland or the countries beyond the sea. Upon mature consideration, however, it appears that a gate, easy of access from either side, well and adequately equipped with portal facilities at which the tolls charged are moderate, will encourage and accelerate the production and movement of traffic. Before accepting the statement as a fact, it may be well to enlarge upon the factors contributing to the conclusion expressed.

Assume that on the land side of the port there is a large hinterland endowed with potentially rich even though not fully developed resources. Grant that beyond the seas there are countries needing the material resources of the hinterland and producing things required in the territory back of the port What factors affect the port's influence upon commercial and industrial progress? The chief factors are:—

Navigability.
Terminal Facilities
Terminal charges
Efficient Administration

It is assumed, of course, that transportation facilities from the port into the hinterland are adequate and will keep pace with the development of traffic through the marine gateway.

Navigability.

It should go without saying that the value of the other three factors affecting the influence of a port is dependent on the navigability of the harbor and the approaches thereto. That is, if the channel entrance is not of sufficient depth to permit free entrance and departure of large vessels, the port is bound to be restricted to a second rate position regardless of how favorable the other factors may be.

Obvious as this is, yet strange to say, the fact has been lost sight of in a number of instances to the detriment of the port affected. In most instances the failure to provide for the deepening of harbor approaches coincident with or in advance of the actual requirements has resulted from a lack of a comprehensive and farsighted port policy. It should be somebody's business to forecast the needs of shipping and provide therefor. If no authority is directly responsible, the matter is almost sure to be permitted to drift until the interests of the port are adversely affected to the extent of arousing belated action.

A particular port may enjoy the advantage of an entrance naturally of sufficient depth to accommodate the deepest draft vessels. On the other hand, it may be that the channel conditions are such that it is not practicable to deepen and maintain a channel that will permit navigation by large vessels, in which case the port is doomed to a secondary position. What has been said applies to a numerous class of ports at which the entrance channels were of sufficient depth, with little improvement, up to the recent advent of the super-cargo boats and large mail liners and are susceptible of further deepening within the limits of reasonable expenditure. Such ports, in most instances, have achieved a degree of importance and represent investments that justify large expenditures, if necessary, to maintain and advance their position.

Clearly the failure to keep navigability of a port abreast with the increase in size and draft of ships would tend to restrict the commercial and industrial progress of the hinterland dependent upon the gateway. On the other hand, it is evident that a port kept accessible to all shipping likely to trade thereat will stimulate industrial and commercial progress as a result of the improved traffic and communicational facilities, that will tend to centre at the marine gateway, providing adequate terminal facilities are furnished.

Terminal Facilities.

It is obvious that the terminal facilities at a port should be adequate to meet the demands put upon them but, in order to determine their adequacy, it is important to come to a definite understanding of the definition of a marine terminal and to define its functions.

A marine Terminal is a transfer station between land and water carriers.

It includes wharves, sheds, warehouses (godowns), freight handling equipments, lighterage facilities and the railways and roadways serving the terminal.

The functions are as follow:

Wharves and sheds to serve as a transfer platform between the ship and land carriers.

It is necessary to provide storage to take care of the overflow of goods awaiting transport or held pending determination of destination. This service is performed by the warehouses (godowns). Unless labor is extremely cheap, it is advantageous to use various contrivances and mechanical devices to assist in the handling of cargo and in any case cranes or other mechanical equipment are necessary to take care of heavy lifts.

Even where vessels can tie alongside wharves, it is frequently convenient to transfer from ship to ship or place to place about the harbor by means of floating equipment. This is the function of the lighterage facilities. At a port, that is, the terminus of a railway system, the wharf and godown side tracks are as much a part of the terminal as the wharves themselves and function to expedite the delivery or removal of goods. The marine terminal tracks should be extended to serve the business, godowns and industrial plants and connect with the various railway terminals.

By means of the terminal railway, roadways and lighterage system, it is practicable to coordinate the various shipping commercial and industrial units of the entire port, enabling it to function as one terminal system

The matter of proper co-ordination is most important at large ports. The congestion of traffic and the high handling costs prevailing at some of the large world ports is the result of failure to plan and administer the port so that the various units supplement each other and function as one terminal system. A mistake may be made in the design of a particular wharf and godown without the efficiency of the port as a whole being appreciably affected, but if the plan for the general arrangement and co-ordination of the whole terminal scheme is not good, the general efficiency of the port would be lowered on account thereof.

Of first importance is a proper comprehensive port terminal plan.

Of second importance is the efficient arrangement and the proper equipment of each wharf and godown unit.

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* Consulting Engineer, American Trade Commissioner.

As to the influence of adequate facilities upon commerce and industry, it has been demonstrated in actual practice that to execute a well conceived scheme of port terminal facilities, especially if kept a little ahead rather than behind actual requirements, induces commercial and industrial expansion at the port and throughout its particular hinterland. This has been demonstrated at Liverpool, but more particularly in the case of Manchester and Antwerp.

At Antwerp, for instance, not many years ago, a programme of port development was initiated that seemed all out of proportion to the financial resources of the little city or even of Belgium. However, the expenditure of some fifty million dollars over a period of twenty-five or thirty years helped to place Antwerp in the rank of London, New York, Liverpool and Hamburg and its citizens became among the wealthiest per capita of any city in the world.

Of course, due care must be taken not to make expenditures out of proportion to the commercial needs or those that will develop within a reasonably short period. Otherwise, the port and handling charges imposed to pay interest on the improvements may become so high that the development of the port will be retarded in spite of the good facilities afforded.

Terminal Charges—

Traffic naturally follows the lines of least resistance, consequently there is a tendency toward the port making the lowest terminal charges.

Other factors, of course, may offset relative higher port costs as for instance ease of navigability, speed of cargo handling, efficient terminal facilities, also advantageous relationship to a productive hinterland or the main ocean trade routes. The advantages resulting from low terminal charges, however, are worth striving for though not at the expense of the real efficiency of the port. It is the usual practice whether or not the wharves and godowns are publicly or privately owned to charge enough for their use to meet at least the interest charges on the investment. On the other hand, quite often it is the practice for the national government to assume the cost of channel improvement and maintenance on the theory that it is a public highway and that the benefits accrue indirectly by fostering commercial progress.

Low Terminal charges should be secured:—

Not by furnishing Poor and Inadequate Facilities—

But by Efficiency of Design and Equipment and Economy of Construction so that Every Dollar Invested will be Rendering full Service.

Moderate port and handling charges thus gained will attract commerce and induce development and expansion of business at the port and throughout its hinterland.

Ease of navigability, efficiency of terminal facilities and economic terminal costs will not fully avail. in fact, may fail to attract commerce unless the port is efficiently managed.

Efficient Administration.

Efficient management is, of course, desirable and very important relative to individual terminal units, such as a wharf and godown company. However, inefficiency of management at one unit, while it may adversely affect that particular facility, in a large port would not appreciably affect the general situation.

On the other hand, the inefficiency of or lack of general port administration may seriously handicap the development of the port and its hinterland.

Formerly the terminal facilities at a port were usually provided by individual or private corporation effort. This method sometimes resulted in a few splendidly equipped and well managed properties but naturally each property had to be developed with little or no reference to other units or the port as a whole. Furthermore, it would often occur that while there were unnecessary duplications of certain facilities of others there was a lack. In other words, the development of the port lacked balance and co-ordination. In order to obviate this trouble public or semi-public harbor boards or trusts have been created to administer most of the leading ports of the world. In some cases the port facilities or practically all of them are provided by the authority. In many instances certain of the facilities are thus provided while others are constructed by private concerns as best suits their requirements.

It is not so important that the wharves, sheds, godowns and other terminal facilities be actually constructed and owned by the harbor board as that it has authority to control and direct all improvements both public and private so that they may be co-ordinated and made to fit into a general comprehensive port terminal scheme.

It is very important in the planning and execution of harbor works and port terminals that the future needs and developments be anticipated as far as possible. Individuals or corporations cannot exercise such foresight except as relates to their own particular business which is another argument in favor of a supreme port authority.

A General Administrative Authority is essential to Far sighted port planning—

Co-ordination of the various port units, private and public.

Economic and Efficient Functioning of the port as one Terminal System.

Furthermore, a harbor trust or port authority by functioning wisely and well can exert a favorable influence on the commercial and industrial development of the port and hinterland.

In conclusion, it may be emphasized that it is of prime importance to any nation or country to look well after its marine gateways. Their efficient improvement and administration, or lack of it may not add to or subtract from the latent resources of the country but properly developed and administered ports will favorably influence commercial and industrial progress.

METHODS OF TRANSPORT IN THE FAR EAST

JUNKS ON THE LIEN RIVER, HUNAN PROVINCE

AN OX-CART IN KOREA.

The Need for System in the Development of China's Communications on Land and Water

No. 1—The Commercial Harbors of China

At present China would appear to have no real policies except perhaps that of conservatism. The country is nevertheless in a period of rapid change and the time is ripe, if not over-ripe, for the formulation of definite schemes as to general policy Peking and Canton seem to be too busily engaged in party strife, and too much paralyzed by the apparent irreconcilability of eastern and western notions, to give real attention to wide national questions.

The first step towards a stable policy for the development of the country is, of course, a stable government. While we as foreigners can only wait and hope for such a consummation, we can nevertheless prepare for that future which we all anticipate for China as the logical outcome of her immense resources of industry and raw material.

The Treaty Ports have probably developed to their highest possible pitch in present circumstances as independent trade centres, and to some measure reciprocity between them has become indispensable. Such reciprocity implies a policy, and if that policy cannot emanate from Peking, it must have its origin in outside circles. So far, in regard to railways, concessions, and individual enterprises, the leading animating principle has often been the benefit of the concessionaire—whether an individual corporation or nation—and while this must to a great degree continue to be so, the time has come when the development of China cannot be allowed to proceed entirely along haphazard lines, but should be guided by a sagacious Government for the benefit of the country as a whole.

The great and abiding need which exists for consistent policies can easily be demonstrated by the employment of numerous examples. One of the most obvious fields for scientific systematization is that of communications. The so-called system of railways in China has developed piecemeal by the addition of concessions to concessions. There is a hypothetical trunk system, with laterals: but as a matter of fact it is not really agreed whether the effective trunk lines should run from west to east or from south to north, and secondary and tertiary lines are in no way rationally developed or planned. Peking does not know how Tientsin, Shanghai, or Canton compare as the import and export foci, and would probably decide such a question by the votes of provincial political societies. The hinterland of each port needs to be demarcated and traffic linked by certain channels towards the most suitable centre.

The inland waterways again show similar need for a policy. The substitution of cash for tribute rice and the transport by sea having diminished the government's interest in the Grand Canal, together with the Huai River floods and other troubles, the canal system is almost useless for through traffic, and it is legitimate for the observer to be doubtful whether Peking really knows or cares whether it can be maintained. In his presidential address the President of the Engineering Society of China in 1916, Mr. H. von Heidenstam, called attention to the needs of the country in regard to waterways and their relation to railways, but so far the Government has remained unresponsive to suggestions.

A Harbor Policy in China

In this issue we propose to deal specially with the demand for consistency and unity of plan in regard to harbor development. The present harbor activities are now a mere competition with a minimum of system and development. While both railways and canals have a political aspect which may hinder the early adoption of a general policy, whatever its origin, no such argument can apply to harbors and there seems no reason why a general harbor policy for China should not be formulated and adopted right away.

In the fully organized world of the future, water communication will be thoroughly systematized The fastest and largest vessels will ply only between world harbors and the oceans will be covered with a primary net work of such routes. Second and third class ocean traffic with steamers of, say, less than 5,000 tons, will radiate to and from the world harbors and subsidiary second and third class harbors, from which again small coastal and inland navigation will develop. A similar system will prevail on land. Main trunk lines will connect the world harbors, and, from the principal internal centres which they traverse, branch lines will radiate to less important towns, the mesh extending until the intermediate areas can be adequately served by motor traffic, which will be on land what barges and launches are on the water.

To achieve such results, which will take many years to develop, there must be a certain fixity of purpose, viz., in other words, a policy which includes some unvarying principles.

It is our idea, and we are supported in this by the recent "Report on the Future Development of the Shanghai Harbor" by two Scandinavian Harbor Specialists and Mr. v. Heidenstam Engineer in-Chief of the Whangpoo Conservancy Board, of which we gave a resume in our issue, of September, 1918, that China must have certain primary harbors.

The dominant question in a harbor apart from inland connections is of course that of draft. Nothing less than 33, 36 or even 40 feet seems to be required in the future, and certainly 30 feet is already now necessary on the primary routes. There must, however, also be ample space for anchorage, complete shelter from storms, facilities for wharfage and good communications with the interior.

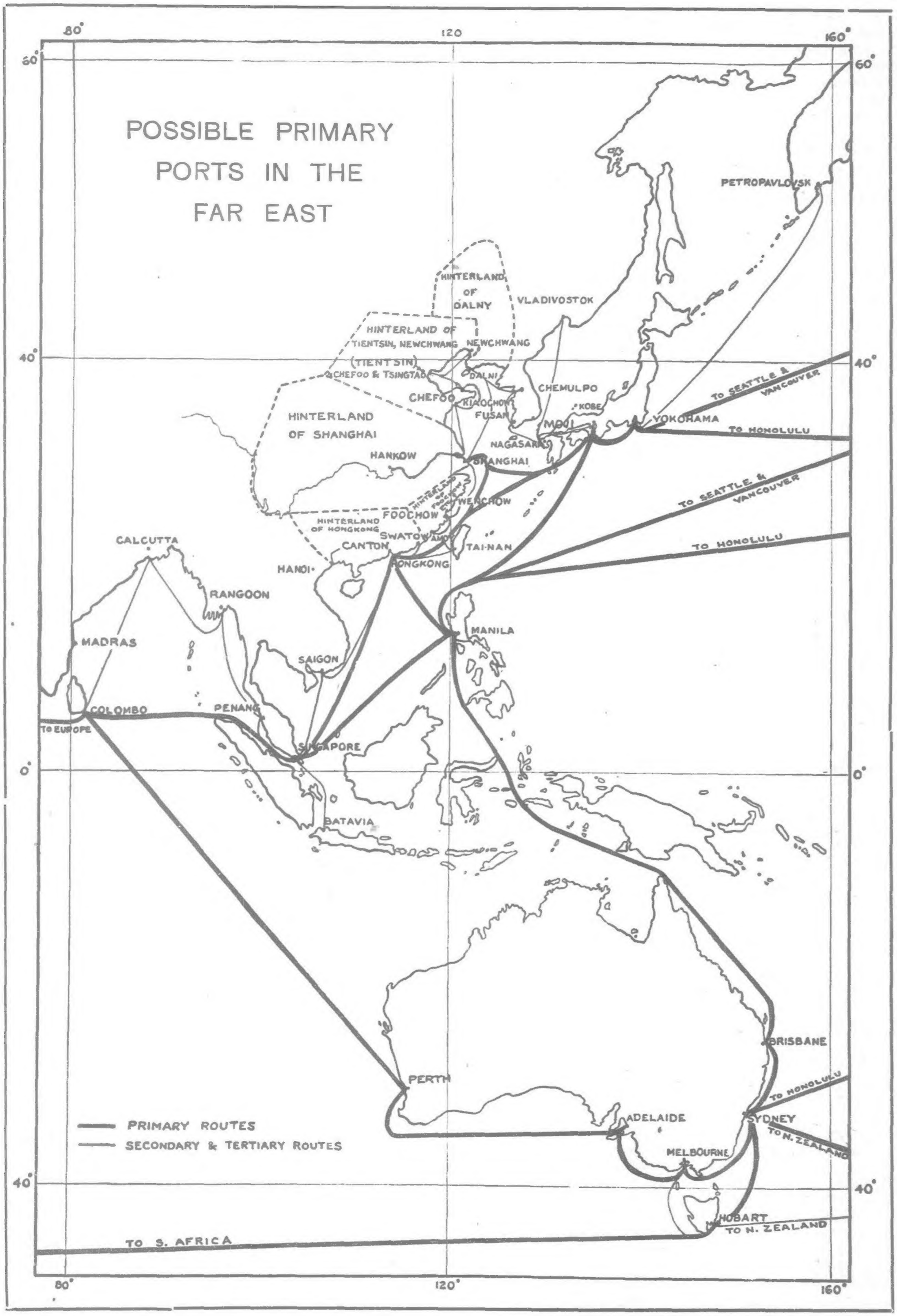
There are but few harbors in China which at all meet these requirements. Competition, biassed to some extent by political restraints of various kinds, have left as the fittest—expressed in their order from North to South—Newchwang, Tientsin, Chefoo, Tsingtao, Shanghai, Foochow, Amoy, Swatow and Canton, to which must be added as being to most intents Chinese, Dalny, Tainan, Hongkong and Kwangchow-wan. The Yangtze ports—Chinkiang, Nanking, Wuhu, Kiukiang and Hankow—have also a claim to be considered, but are really a special class by themselves with peculiar advantages and limitations.

All these places are important trade centres, but only a very few can hope for premier rank, although a certain amount of transoceanic trade will always go direct to many of them. Newchwang, Tientsin, and Foochow all suffer from difficulties of approach, which make it practically impossible for those places to hope for the largest vessels ever to reach them. All three are, of course, of great local value, and with proper measures will continue to be accessible to second class steamers, both coastal and transoceanic. Tientsin especially has a very favorable central trade position for the great northern plain.

Amoy and Swatow lie on a very broken coast; are not too well supplied with area, and have comparatively little productive hinterland, being cut off from the interior by successive ranges of mountains. The Yangtze ports cannot be reached in winter by the largest ships, and are too far away from the over-sea routes.

Canton is entirely overshadowed by Hongkong, and also is subject to difficulties of approach, although as a local centre its future is very promising.

Tainan has only the mountainous island of Formosa as its hinterland, and Kwangchow-wan is too near and inferior to


POSSIBLE PRIMARY PORTS IN THE FAR EAST
80°
120
160°
60°
60°
40°
40°
0°
0°
40°
40°
HINTERLAND OF DALNY
VLADIVOSTOK
PETROPAVLOVSK
HINTERLAND OF TIENTSIN, NEWCHWANG
NEWCHWANG
(TIENTSIN)
CHEFOO & TSINGTAO
DALNI
CHEMULPO
CHEFOO
KIAOCHOW
FUSAN
KOBE
HINTERLAND OF SHANGHAI
MOJI
YOKOHAMA
TO SEATTLE & VANCOUVER
TO HONOLULU
NAGASAKI
HANKOW
SHANGHAI
HINTERLAND OF FOOCHOW
WENCHOW
FOOCHOW
HINTERLAND OF HONGKONG
SWATOW
AMOY
TAI-NAN
CALCUTTA
CANTON
HONGKONG
HANOI
RANGOON
MANILA
MADRAS
SAIGON
COLOMBO
PENANG
TO EUROPE
SINGAPORE
BATAVIA
BRISBANE
PERTH
TO HONOLULU
ADELAIDE
SYDNEY
TO N. ZEALAND
MELBOURNE
HOBART
TO N. ZEALAND
TO S. AFRICA
PRIMARY ROUTES
SECONDARY & TERTIARY ROUTES

Hongkong to play a big part. The future may give both a large local business but their spheres of possible influence are limited.

Hence we are left with Chefoo, Tsingtao, Dalny, Shanghai and Hongkong. The first two are so close that the present disadvantages of the former as to hinterland connections and accommodation considerably favor the latter, and in any case both are liable to be overshadowed by Dalny, unless the most vigorous steps are taken for their development.

The general conclusion seems then to favor Shanghai and Hongkong as the great shipping centres for China, with Dalny in a class by itself for Manchuria. Dalny and Hongkong being under foreign control, Shanghai only remains as the Chinese great shipping centre.

Whether Shanghai can meet future demands as to draft is a matter for the experts, but otherwise it is strongly favored.

Shanghai is situated in a most favorable position. Almost central on the coast of China, almost central in the western shore of the Pacific, almost equidistant from America and Europe, with the greatest area of inland waterways in the world behind it, with a potential wharf frontage of 20 miles, with cheap and at least fairly efficient labor, with large potential coal and iron supplies within one thousand miles, and good water transport thereto, with a climate which with proper hygienic control is not injurious to health, with possible railway connections to all Asia and Europe. Shanghai is almost unequalled as the site in South and Central China for a great world harbor of the premier rank.

With a reasonable amount of foresight, Shanghai is bound to come into direct communication with Singapore, Hongkong, Batavia, Manila, Sydney, Valparaiso, San Francisco, Vancouver and Yokohama. Its secondary traffic will communicate with Amoy, Foochow, Tainan, Hankow, Tsingtao, Chefoo, Tientsin, Dalny, Seoul, Fusan and Nagasaki.

The map on page 45 shows a probable traffic web for the Far East. For the North and Central parts of China, this ocean communication system centres at Shanghai, but the utility of a web depends, however, on the spider's ability to make and use it.

In putting forward a plea for a consistent harbor policy in China we are fully aware that the issues are large and perhaps not always clear, and that the vested and political interests affected are considerable and exert tension in different directions If, however, the harbor development is not backed up by a railway and inland water system, which fits in with the roles assigned to the different ports, some parts of the communications of China will no longer be fully effective.

In a following issue—in Article No. II—we shall return to the aspect of the question in regard to railroads and inland waterways

Shipping in the Far East during the War

From the time that Germany commenced her ruthless submarine warfare shipping to and from China and Western countries began to dwindle, with the natural consequence that Allied tonnage became controlled by the respective Governments and the few British and French liners remaining in the trade with the Orient carried nothing but "priority" cargo. Merchants with general cargo were entirely "shut out" except for an occasional opportunity to forward very small parcels to London by Japanese lines, at exorbitant rates, the bulk of the Japanese shipping space being taken in Japan before the ships reached China.

The Suez Canal route became discarded and all ships to Europe sailed via the Cape of Good Hope. Ships in the New York Conference, on the route between the American East Coast and China, used the Panama Canal route exclusively from May, 1916. Much cargo was diverted to the overland route across Canada and the United States, so great was the need of Chinese produce and the shortage of bottoms.

During the latter part of the War (1917-1918) but for Japanese tonnage freights could not have been moved from China at all, but, of course, China shippers were only given the residue of space in Japanese steamers that Japan could not use herself—or that she at least felt she should give to satisfy foreign merchants in China, Hongkong and Malaya.

From the beginning of 1917 rates across the Pacific have fluctuated tremendously, and no less than nine different tariffs have been issued in the course of about 18 months. The Rate rose from $15 per ton of 40 cubic feet for general cargo, in January, 1917, to $60 gold in May, 1918, when it reached its zenith. Since that time it has receded to $40, by Conference Lines, and that is the rate at which it stands now, although considerably cheaper rates are obtainable from non-Conference steamers. The reason for this must be looked for in the very stringent import regulations instituted by the United States Government early in the year and the abnormal rise in exchange which took place at the beginning of 1918, which brought the export trade of China almost to a standstill.

The situation at present with regard to space, rates and sailings via Pacific is distinctly easy, and the prospects, so far as can be seen at present, are that the situation will become easier still. The fact that at the present time (January, 1919) there is ample space offering (at rather low rates at least by the non Conference lines) can be attributed to the fact that import regulations, high exchange, and a general stagnation in trade due to the fact that merchants are cautious of buying goods at present high prices when the markets may fluctuate downwardly at any moment, have all combined to restrain the movement of cargo from East to West. However, freight in the opposite direction is moving more freely and ships are arriving at Eastern ports with holds filled.

As for rates towards Europe, the rate to London has dropped from 1,200 shillings a ton to 450 shillings at the present writing, and the prospect is that it will fall to a lower figure within the next few weeks. This, also, is due to a lack of freights toward Europe. The only sailings for Europe within the past two years have been the Japanese liners and an occasional French sailing, and space in such ships has been offered and accepted in terms of a few cubic feet. The situation now is that merchants in China are being solicited for freights by the Japanese liners. No British or French vessels have yet resumed sailings in the China-European service though sailing schedules are being arranged. The Japanese lines still dominate the situation.

As for shipping along the China Coast, the requisitioning by the British Government of a large number of ships in the coasting trade and the withdrawal home of a large number of Norwegian tramp steamers seriously affected this market, and rates soared to unprecedented heights in the early part of 1918, of which Japanese tonnage took full advantage. As the Japanese ships were the only craft that could fill the demand, the rates for steamers on a time-charter basis went to the unheard-of height of $43.50 Mexican per deadweight ton per month. Since the signing of the armistice a collapse has set in and the markets, especially in the South, are very weak.

Summing up the situation, while at the present writing it is distinctly easy this is due wholly to the reasons given, i.e., high exchange, stringent import regulations, and a temporary business stagnation, it is difficult to say what may come in the future. It rests largely on the questions of exchange and of the need of raw material abroad. If exchange returns to a normal figure by a drop in the price of silver, the export trade of China should grow enormously—so much so that in all probability the former tonnage in the China trade will not be sufficient to care for it. However, if trade in foreign countries continues to expand, requiring the minting of more and more silver coins, or if the output of silver is not largely increased, the silver shortage may continue indefinitely and exchange will remain high. Looking upon the other side, that of the demand for raw products abroad, the future of the export trade of China rests upon the ability of foreign merchants to pay 5 shillings (or $1.21 gold) for Chinese merchandise valued at a tael, and at that the purchasing power of the tael has depreciated due to the demand for Chinese produtes brought about solely by war needs.

Railways Serving the Ports of China

No less than eighteen deep-water ports of China are connected with the interior by means of railways. Two additional ports may fairly be claimed by China in this connection. At the far north, Vladivostok serves as the terminus of the Chinese Eastern, which for one thousand miles traverses the Manchurian provinces. At the south, Haiphong, in French Indo-China, is important as a railway terminal and as a port largely because the railway from it reaches into the interior of one of China's finest provinces —Yunnan. Between these extremities, there are Antung, Dairen (Dalny) and Newchwang, Chingwantao, Tientsin and Tsingtau, Shanghai, Chinkiang, Nanking, Pukow, Kiukiang, Hankow, Hangchow, Ningpo, Amoy, Swatow, Kowloon and Canton. The first three named are served by the South Manchuria Railway, which is the name given to the portion of the Chinese Eastern serving the Liaotung peninsula when the Japanese succeeded to the Russian interest. At Changchun the South Manchuria is met by the southerly branch of the Chinese Eastern which joins the main line of the latter at Harbin. While north of Changchun the Russian gauge of 5 feet obtains, in contrast to the standard gauge of 4-ft. 8½-in. on other portions of the line, the entire length of 500 miles is operated much as one line. Some 250 miles of branch lines serve to connect the three ports with each other and with the famous Fusan Collieries. A branch line of 79 miles also connects the main line at Changchun with Kirin, the capital of the province of that name. The latter line, though financially a portion of the Chinese Government railways, is operated as a branch of the South Manchuria. Tsingtau is connected with the interior by means of the Shantung railway, built by German capital but during the course of the war operated by the Japanese following their capture of the port. This line joins the Chinese Government railways at Tsinan—256 miles west of Tsingtau, and has 24 miles of branch lines. With the exception of Kiukiang and Swatow, which are served by private or provincial lines, the other ports are for the most part, termini of lines known as the Chinese Government Railways.

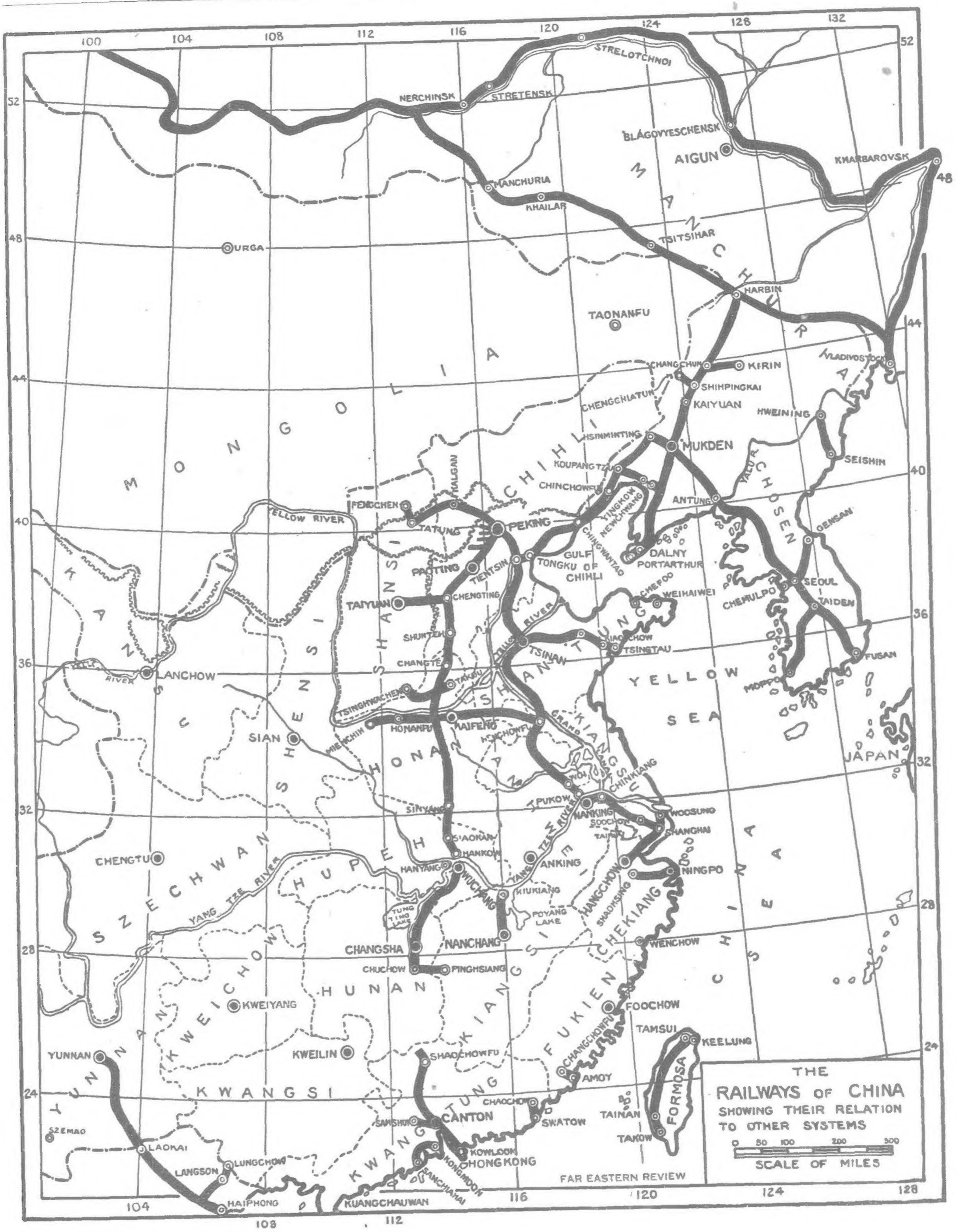
The extent and location of the lines composing the Government railways is best shown by the map on another page. It will be noted that the major portion of the mileage is north of the Yangtze river. Out of 6,294 kilometres of mains and branch line in operation, at the end of 1917, only 1,301 were south of the river. Of the 4,987 kilometres in North China, all but 280 is line contiguous with other parts of the Government system; the exceptions, the Kirin-Changchun and Shihpingkai-Chengchiatun lines, are separated from their fellows only by the intervention of Japanese management, rather than in physical fact. In fact, north of the Yangtze river, railway trackage belongs to the continental system. By means of yard connections at junction points, Hankow and Pukow on the Yangtze river are connected by rail with not only such extreme Chinese points as Peking, Tsingtau, Moukden, Dairen and Antung, but also with Vladivostok, Irkutsk, Moscow, Petrograd and the other cities of Europe.

The kilometrage south of the river, in contrast, is broken into at least seven sections. From Shanghai one may run his car north over the 327 kilometres of the Shanghai-Nanking or south over about 210 kilometres of line to Zahkow, on contiguous line; but at the latter point occurs a break in what some day will be a continuous line to Ningpo. At Canton three lines radiate; the Canton-Samshui, the Kwangtung provincial line to Shiuchow, and the Canton-Kowloon line to the British territory opposite Hongkong; but none of these sections are as yet united. The first named and the last are separated by the city, while the Canton-Samshui is on the opposite side of the river from the other two lines. The Changchow-Amoy line extends back only 28 kilometres. But the Hupeh-Hunan section of the Canton-Hankow line joins up with the Chuchow-Pinghsiang road at Chuchow, and makes a contiguous line of about 470 kilometres. In fact, except for this section, and that about Shanghai, these southern lines merely serve as pegs between which it is hoped to string a railway system like that in the North.

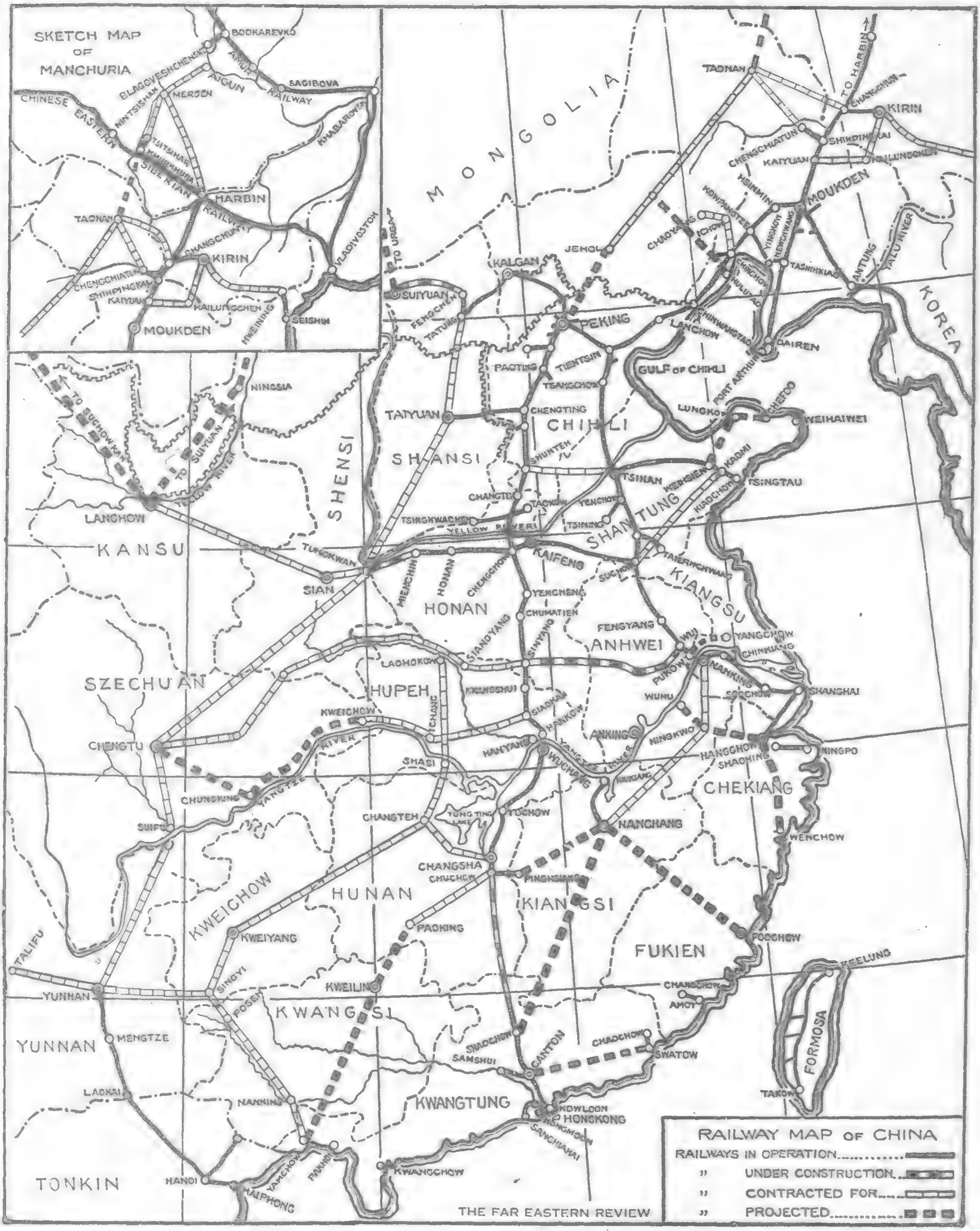
The following table and the map together will give an idea of the length of line accessible from any port:—

Kilometres of Railway Operated, Classified by Use and Distributed by Lines

NAME OF ROAD	Main Line	Branch Lines	Industrial Track, Yard Track and Sidings	Total Track	REMARKS
Operated lines	Kilometres	Kilometres	Kilometres	Kilometres	
Peking-Hankow	1,214.493	(*a*) 98.420	(*b*) 336.633	(*ab*) 1,649.546	(*a*) Includes 7.242 Kms. leased from Peking-Moukden line.
Peking-Moukden	846.736	118.371	291.447	1,256.554	(*b*) Includes 4.037 Kms. leased from Peking-Moukden line.
Tientsin-Pukow	(*c*) 1,008.959	97.880	213.124	(*c*) 1,319.963	(*c*) Excludes 4.361 Kms. Running Powers on Peking-Moukden line.
Shanghai-Nanking	311.065	16.093	70.280	397.378	(*d*) Includes 4.043 Kms. leased from Peking-Moukden line.
Shanghai-Hangchow-Ningpo	280.757	5.665	57.421	343.803	(*e*) Excludes 528 Kms. Running Powers from Peking-Moukden line, but excludes 2.319 running Powers.
Peking-Suiyuan	(*d*) 428.752	(*e*) 38.098	137.806	(*de*) 604.656	(*f*) Includes 2.237 Kms. leased from South Manchuria Railway.
Chengting-Taiyuan	242.950	...	81.791	324.741	
Taokow-Chinghua	150.007	2.446	31.704	184.157	
Kaifeng-Honan	185.000	...	18.890	203.890	
Kirin-Changchun	(*f*) 129.890	...	24.961	(*f*) 154.851	
Chuchow-Pinghsiang	96.561	...	9.952	106.513	
Canton-Kowloon	143.296	...	20.326	163.622	
Canton-Samshui	48.924	...	22.370	71.294	
Changchow-Amoy	28.000	...	3.535	31.535	
Total Operated lines	5,115.290	376.973	1,320.240	6,812.503	
OPERATED BY CONSTRUCTION FORCES:—					
Kaifeng-Hsuchow	276.300	...	...	276.300	
Hupeh-Hunan	370.000	...	...	370.000	
Shihpingkai-Chengchiatun	150.000	...	...	150.000	
CHINESE GOVERNMENT RAILWAYS ...	5,917.590	...	...	7,608.803	



RAILWAYS IN OPERATION IN CHINA, FEBRUARY, 1919.



PROJECTED EXTENSIONS OF CHINA'S RAILWAYS.

This is the most up-to-date and accurate map yet issued showing the lines of railway so far contracted for by China. A few of the projected lines which are, or have been, under serious discussion are also given.

Need of Standardization

The Yangtze river most effectively separates the lines in the South from those of the North. No bridge or car ferry so far makes it possible for equipment on one side to pass over to the other. Besides it is scarcely correct to assume that the lines North are as much of a system as the paragraph above might lead one to infer. Attention has already been called to the fact that at Changchun, there is a change from the standard gauge on the South Manchuria railway to the 5-foot gauge on the Chinese Eastern Railway. While the standard gauge prevails in the remaining lines, the Cheng-Tai has a gauge of one metre, which is also the gauge of another French line, the Yunnan railway. On the Cheng-Tai (Chengting-Taiyuan) line an experiment has been tried by way of an extensible bogie, by which a car can be made to run on tracks of either gauge. By release of a cotter on a broad bearing axle box, the wheels can be forced inward or outward at will. When it is wished to make the change the cars are hauled in the appropriate direction over a tapering section of track re-inforced by guard rails. When the wider gauge is wanted the guard rail forces the wheels outward: when the narrow gauge is wanted the track rail forces the wheels inward as the car is hauled along the track. But one accident occurred early in the history of this experiment, and it was given up. Whether the activity of the military in appropriating cars influenced the officials of this line toward avoiding the use of a device which might lead to the loss of their cars, only the officials themselves can state. Hence the break in gauge between the Cheng-Tai and the Peking-Hankow is absolute.



"TEAMING" FREIGHT TO THE YARDS OF THE PEKING-MOUKDEN RAILWAY AT TIENTSIN

Between the Chinese Government lines and the South Manchuria Railway through movement of equipment is also impossible except in special trains. The reason for this is found in the height of the draw bar. The diameter of the wheel used under Government equipment is like that used in England and some lines of continental Europe, while that on the South Manchuria equipment is like that in Japan and America—considerably less. Hence the wagons cannot move in the same train. For yard movements an adjusting car has been used somewhat—a car with the drawbar low at one end and high at the other.

Upon the contiguous Government lines, except for the Cheng-Tai, there is no physical obstacle to a complete utilization of the entire length of line by equipment which might be available at any port touched by such lines. One qualification, however, must be mentioned. The grades over the Nankou pass are in excess of three per cent., and safe operation requires the use of the automatic train brake. Wagons of the Peking-Suiyuan line are so fitted, but on the lines with which it connects the wagons are not so fitted. Of course Peking-Suiyuan cars can be hauled over such connecting lines, but when it comes to reverse the process, it is not so easy. It is impossible to put such a car in the middle of a Peking-Suiyuan train, for it would cut the connection between the engine and the train brakes. At the end of the train a single car, might be hauled with comparative safety, but in larger numbers, the risk would be considerable.

Beyond the gauge of the track, the diameter of the car wheel, and the height of the drawbar, there has been no standardization upon the Government railways. This lack of uniformity puts no fatal handicap to the use of any portion of the system as a means of communication to any port, but does introduce a few features which are worthy of attention. The situation arose because of the manner in which the Government railways were built. As everyone knows most of the lines were built by foreign capital of various nationalities. This immediately brings in the subject of language. While Chinese is the language of ordinary business, a foreign language becomes the official language of the contractual relations with the building company and the secondary language of business. With the elimination of German influence, these foreign languages are now reduced to four: English, Japanese, French, and Russian. English is spoken on the Peking-Moukden, Tientsin-Pukow, Shanghai-Nanking, Shanghai-Hangchow-Ningpo, Canton-Kowloon, Hupeh-Hunan and Taokow-Chinghua lines; Japanese upon the South Manchuria and Shantung lines, French upon the Peking-Hankow, Chengting-Taiyuan, Kaifeng-Honan and Yunnan lines, and Russian upon the Chinese Eastern.

This foreign character, coupled with the terms of the loan contracts, has had a nationalistic influence upon the equipment of the various lines. Subject to limitations which were very broad the standards and specifications of the equipment were left to the discretion of the contractor. Hence in addition to the varieties of design which any single system of railways might naturally show, the Chinese Government lines have diversities as to national type, and the individual diversities which result from the independence of one contractor from another.

The Chinese Government railways consist of fourteen different lines. Add to this four "concessioned" lines and the numerous private lines, and one at once perceives the opportunity for diversity. As an Equipment Company representative said, recently, "There aren't films enough in China to take a picture of each type of railway equipment there."

Type and Capacity of Cars

Chinese railways observe the usual classification of goods wagons as between open and closed, or "box" cars. Among the open wagons, the flat car without sides is not as common as in some countries, most of the open cars being of the type known abroad as gondola or coal cars. It must not be supposed, however, that this type of equipment is confined in use to the movement of coal and similar coarse articles of commerce. There is practically nothing of importance shipped upon Chinese railways that at some season does not move in this sort of car. In the first place they constitute eighty per cent. of the total number of wagons. In the second place, soldiers do not find them as comfortable living quarters as the closed wagons, and so do not commandeer them to the same extent. A large number of these open wagons are fitted with doors, hence those with high sides are readily used for the shipment of live stock. Even horses are generally hauled thus, for the Chinese horse, being small, can barely get his head above the high sided car. The high headed mules are tethered. Forms of goods readily damaged by weather are first loaded with a ridge in the centre and then covered by matting made of split bamboo which in double layers turns water quite effectively. This same matting can easily be transformed into an awning by means of a few bamboo poles and some rope, if the sun rather than the rain is the destructive element. There are a few special classes of goods wagons, such as stock cars, tank cars, a single poultry car, etc. At the end of 1916 the relative numbers of the main types were as follow:—

Covered wagons...	2,480
Open wagons	8,004
Special wagons	110
Total ...	10,594

The average capacity of goods wagons is slightly under 25 "long" tons. Closed wagons average a little higher than open wagons. Notwithstanding this some of the largest cars are of the open type and have a capacity of 40 metric tons, about 100,000 pounds. But among the open wagons is a large number with a capacity of only 10 tons, others of 12 tons, and still others of 15 tons. This brings down the average. The typical closed car is of thirty tons capacity, with a considerable number, twenty tons.

Great Shortage of Equipment

There is a shortage of all sorts of equipment in China The lines were developed almost to their full capacity before the outbreak of the great war. Since that time prices have been so high, deliveries so uncertain, and financial conditions generally so difficult that very few purchases have been made. Added to the difficulties resulting as a matter of course, has been the increase of traffic due to the decrease of shipping along the coast and the appropriation of cars and the use of locomotives by the military in China. Several of the lines are limited by their locomotives more than by their wagon supply. These lines will be indicated by the following table which shows the average number of kilometers run by each locomotive during the year 1916:—

TABLE II.

Kilometres Run per Road Locomotive.

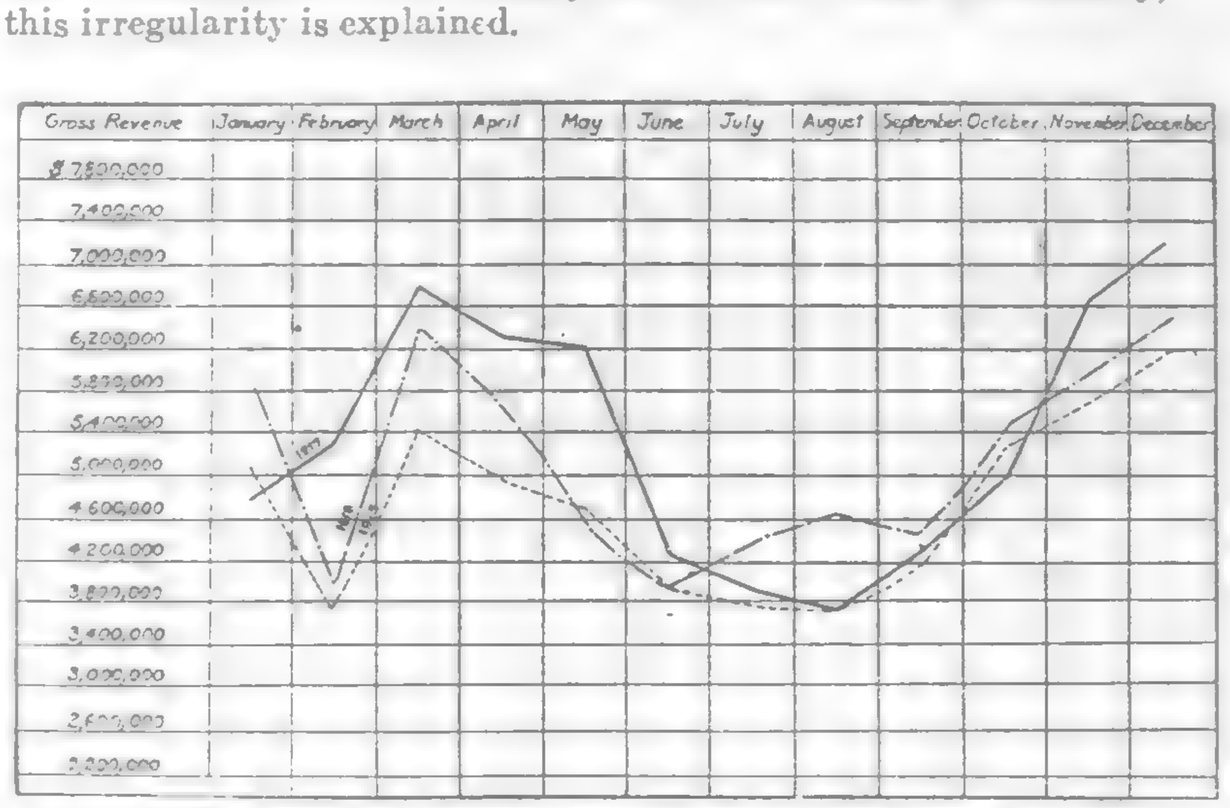
	Name of Line.	No. of Passenger and Goods Locomotives.	Locomotive Kilometres Total Road.	Per Locomotive.
1.	Peking-Hankow	104	6,740,861	64,816
2.	Shanghai-Nanking	33	2,058,550	62,380
3.	Taokow-Chinghua	7	374,913	53,559
4.	Tientsin-Pukow	76	3,900,897	51,327
5.	Kaifeng-Honan	10	490,769	49,077
6.	Kirin-Changchun	10	463,153	46,315
7.	Peking-Moukden	126	5,265,134	41,178
8.	Canton-Kowloon	12	494.140	41,178
9.	Chuchow-Pinghsiang ...	10	394,773	39,477
10.	Shanghai-Hangchow-Ningpo	24	824,764	34,366
11.	Canton-Samshui	6	189,342	31,557
12.	Peking-Suiyuan	44	1,122,620	25,514
13.	Changchow-Amoy	2	43,457	21,728
14.	Chengting-Taiyuan	44	861,033	19,569
	Chinese Government Railways ...	503	23,224,426	45,717

The average for the United States in 1914 was 43,637. Not only is the Chinese record higher, but the method of computing the statistics is such as to make the comparison still more startling. The Chinese figures, exclude all the switching done by road locomotives. In the United States the policy is to use up a locomotive quickly rather than to repair unduly. In China the market is so far away, that the announced policy is to make extensive repairs. But on such lines as those at the head of this list such a policy is impossible to execute.



SO FAR, THE "COOLIE" IS THE CHEAPEST DRAUGHT ANIMAL IN CHINA

The condition of the wagon supply is best attested by a comparison with America under peace conditions. In America each ton of car capacity transports a ton of freight an average distance of 145 miles twice a month. In China the same ton of car capacity transports a ton of freight 89 miles nearly six times a month. When a car is loaded only a few hours are required to run an additional 56 miles. The delays have always been in the loading and the unloading. But the Chinese car gets loaded and unloaded three times to the American car's once. The demand for wagons is much greater during the fall and winter months than during the spring and summer months for the big grain movement then is added to a large coal movement. The following diagram will make this clear. Some irregularity is shown in January and February. When one remembers that February is ten per cent. short in days, and that the Chinese New Year, which means that a large proportion of the mercantile community is taking holiday, occurs sometimes in late January and at other times in February, this irregularity is explained.



OPERATING REVENUE BY MONTHS, FOR THE YEARS 1915, 1916 AND 1917

REVENUE EXPRESSED IN STANDARD CHINESE DOLLARS

The scarcity of wagons is generally reflected by the work which is obtained from the supply at hand. The relative shortage upon the several Government lines is indicated by the following table. In this table performance results are obtained by computing first the number of full loads carried per car during the year. This number is multiplied by two in order to get the number of days required for loading and unloading cargo. The remainder when the resulting product is subtracted from 365 yields the number of days left in the year for actually running with or for cargo. Such a figure divided into the number of ton kilometers carried by each ton of carrying capacity during the year, gives a figure which as a basis of comparison eliminates the inequalities in length of haul upon the various lines. The larger the quotient, the less idle time per car, or the more effective the running schedules. In some of these cases only one day has been allowed for both loading and unloading because of circumstances connected with the line. It will be observed from this comparison that all the longer lines are very busy.

TABLE III.

Ton Kilometers per Running Day, 1916, per Ton of Carrying Capacity.

Name of Line.	No. of Loads (1)	Number of Days For Loading and Un-loading.	For Running	Ton Kilometers per Ton of carry Capacity Total.	Per Running Day	Ave. Haul per Ton (kms.)
Peking-Hankow	66	132	233	15,722	67.4	238
Peking-Moukden	73	146	219	9,544	43.5	131
Tientsin-Pukow	55	110	255	13,777	54.0	252
Shanghai-Nanking ...	82	164	201	18,896	94.0	218
Shanghai-Hangchow-Ningpo	25	50	315	2,341	7.4	94
Peking-Suiyuan	70	140	225	4,436	19.7	64
Chengting-Taiyuan ...	62	124	241	6,002	24.9	79
Taokow-Chinghua ...	164 (2)	164	201	12,299	61.1	75
Kaifeng-Honan	89	178	187	6,362	34.0	72
Kirin-Changchun	80	160	205	4,809	23.4	60
Chuchow-Pinghsiang ...	181 (2)	181	184	16,952	92.1	93
Canton-Kowloon	52	104	261	2,953	11.3	57
Canton-Samshui	39	78	287	356	1.2	9
Changchow-Amoy ...	10	20	345	1,828	5.3	19
Hupeh-Hunan	39	78	287	1,766	6.2	45

(1) i.e., number of tons carried per ton of carrying capacity available.
(2) One day only for loading and unloading.

This chronic shortage of wagons means that during the busy season a very considerable quantity of goods cannot be hauled as offered, but must await its opportunity. The railways as a rule have but a limited amount of godown space, hence the shipper must arrange his own storage facilities. Although harvest time



TYPES OF COAL WAGONS ON THE PEKING-HANKOW LINE. A 12-TON WAGON WITH 40 TONS WAGONS AT EITHER SIDE

is subject to frequent rains, a large proportion of grain shipments wait for cars protected only by coverings of matting or perhaps tarpaulins. The assignment of cars to applicants is in the hands of station masters, who in consequence have a power not to be ignored. Perhaps no country has failed of such an experience at some period or other, and has witnessed the advantages to shippers which is derived from the friendship of the car distributing authority. Invariably in such cases the means taken to acquire and maintain such a valuable friendship become more and more subject to criticism. Of course powerful firms are in a position sometimes to resist this tendency without paying tribute to it. But the attitude is dangerous, for it is so easy for cars to develop "hot boxes" or other defects, and thus be set out on sidings where they may be "forgotten." A former Minister of Communications, Hsu Shih-ying, in an official proclamation publicly charged that practices of this nature on the government lines were driving business away to competitors. There are those who assert that this Minister was in a position to speak with authority upon the subject.

The Question of Tariffs

Compared with many foreign countries, Chinese railway tariffs are simple affairs. However, looking at the entire length of line. and the large number of commodities hauled between various pairs of stations, one is impressed with the complexity of this comparatively simple matter. Probably not more than five hundred different commodities are recognized in the Chinese tariffs, compared with thirty thousand in America. The greater portion of the traffic moves upon regular class rates instead of special rates—if exception be made of coal. Of the latter the points of origin and destination are few, so that the special rate has every appearance of regularity. Yet these tariffs partake of all the differences shared by the physical properties of the lines. There are fourteen separate lines in the Government system, hence there are fourteen different tariffs on the Government lines. There is no uniform classification of commodities or of rates, although there has been some effort toward a uniform classification of commodities and in the form of tariff. Yet there are many resemblances. For example, all the lines place the risk of the shipment upon the shipper. The Shanghai-Nanking and the Shanghai-Hangchow-Ningpo Railways offer an insured rate, i.e. "railway risk," but upon the former line at least the shipper apparently prefers to follow his own means for averting loss and avail himself of the lower rate, for practically all the shipments are at owner's risk.

The presence of a large number of closed cars upon these lines has some bearing upon this choice. The proportion of the total business handled by "transportation" companies has still another influence, as will appear later. Upon the Shanghai-Hangchow-Ningpo insurance costs the shipper 25 cents per ton on a haul of 100 miles. On the Shanghai-Nanking a charge of $2.00 per car is added to the owner's risk rate in order to arrive at the charge for Railway risk. The length of the haul has nothing to do with the cost of the insurance, in contrast to the Shanghai-Hangchow-Ningpo line, it being the theory that losses occur in terminals rather than in transit. Other lines refuse to offer any "railway risk" rates, on the ground that the shipper has means of protecting himself which are more economical than the railway could supply. The risk from pilferage is high. It must be remembered that in China the margin above bare subsistence is very narrow in the case of an overwhelming proportion of the population. As a result there is no little trouble with the stealing of spikes from the track, of nuts and loose parts from cars and other equipment, and naturally cars standing in a yard at night offer a great opportunity to the clever, hungry thief. Until steel floors became common, it was no uncommon thing for the bottoms of closed wagons to be ruined by augur holes bored through in order to tap kerosene cans or dry grains. Rice hauled in open cars or slatted cattle trucks, suffers considerable loss from petty thievery accomplished by means of a hollow bamboo with a sharpened end. This sharp end is thrust into the sack and the tube makes an excellent conveyor. It would not be quite right to say that the railway never pays a claim. For palpable negligence under certain conditions, railways have admitted responsibility, but China is certainly no happy hunting ground for the "Claim shark."

It is the universal rule that a charge additional to that in the tariff is assessed for the loading and unloading of cars at stations. The railway furnishes the forces, and assesses the charge against the merchant. In those few cases where the merchant has a private siding he may by special arrangement, and perhaps payment of a licence fee, attend to this feature with his own forces. Under such circumstances he has a switching charge to pay. The rates are not uniform by any means, varying from 5 cents per ton to 15 cents per ton, with variations to be added for variations in the nature of the transfer, that is, be it from car to platform, car to boat, car to wagon, etc. It will be necessary to look up the tariff for each line individually.

A Variety of Classifications

The Shanghai-Nanking is the only line which carries the major portion of its goods traffic on special rates—some two hundred of such rates being in effect. The Kaifeng-Honan, however, has nearly 100 such special rates, but they apply almost entirely to coal and oil, while those on the Shanghai-Nanking apply to foodstuffs, manufactures, and almost all the principal articles of commerce



ON THE CHENGTING-TAIYUANFU LINES. A STATION YARD CUT OUT OF ANTHRACITE. NOTE THE BLACK SEAMS AT THE LEFT

in the territory which it serves. The numbers of classes recognized vary considerably also. On three lines three separate classes are provided. On two lines there are six classes. Another line has five classes. And the remaining lines which use the classification system have four classes with one or more special classes like explosives, inflammables, highly valuable goods, etc. On the Chengting-Taiyuan this system is not followed at all, commodities being listed according to value in twenty-seven different grounds. The Kaifeng-Honan follows a similar system.



TWO TYPES WITH EXTENSIBLE BOGIES, AIMED TO TRANSFER FROM NARROW TO BROAD GAUGE. NOTE PLATFORMS AT EACH END OF CAR TO SERVE AS SHELTER FOR BRAKEMEN. THE STOCK CAR, ON THE RIGHT, IS FITTED WITH TROUGHS FOR FEEDING AND WATERING HOGS AND OTHER LIVE STOCK EN ROUTE

After the class has been decided upon there is still a considerable difference of method in applying the rate. In general it may be said that the most important terminal cost is covered by the charge for handling, while the line costs are assessed with a rather close adherence to the distance basis. However, several of the lines admit the "fade-away" principle, that is a slightly reduced rate per mile for longer distances than for shorter hauls. The Peking-Hankow is such a line. The rapidity of the "fade" is not at all regular between the various commodities. For example, for tea the rate varies according to five groups of distances, while for anthracite coal there are seven groups. There are also a few rates on coal as between certain specified points. The unit of distance on the Peking-Hankow, as on the other French and Belgian lines, is the kilometre. A simple example of the application of a Peking-Hankow rate may be taken from Tariff No. 35, Wheat. Movement, Yencheng to Peking. An intermediate point of importance, Sin-Siang-Hsien is made a basing point from which to Peking the rate per ton is $9.60.

From Yencheng, first 25 kilometres 25 by $0.409 equals		$1.00
Remainder to Siang-Hsien 195 by $0.284 equal... ...		5.54
		6.54
		$16.14
To upper cipher, total rate per ton...		$16.20

On the Shanghai-Hangchow-Ningpo, this principle takes uniform application upon all class commodities, special rates applying between specific points. On the latter line there are ten distance groups recognized. On the pioneer line, the Peking-Moukden the straight mileage basis is followed, no concessions of any sort being allowed, except a minimum of 30 miles is assessed within certain districts instead of 35 miles which is the general rule. On the Tientsin-Pukow the freight charges are all worked out in advance. The entire length of line is provided for in two mile groups of distances. In the table of charges, opposite each distance under each class is entered the freight charge per ton or per picul as the case may be. A minimum of fifteen miles is assumed. At 100 miles the third class car load rate works out to 1.7415 cents per ton mile. At 200 miles it works out to 1.6575: at 400 miles, it is 1.3721: 600 miles, 1.13 cents. Hence the "fade-away" principle or "tapering" rate is to be found on that line also.

The above paragraph gives some idea of the principles underlying Chinese rates. The application can be illustrated better, perhaps, by taking an actual instance, although in the selection of instances great injustice may result. Out of five hundred rates it would be remarkable if one could not pick out some example to prove any point one wished to make which at the same time would be entirely untrue of the system as a whole. But there are two objects which are above all fundamental to China. These are rice and coal. The actual rates upon these commodities on the principal lines are as follow:—

Rice.	Car Loads.
Peking-Moukden—3rd class ...	... 3 cents per ton mile.
Peking-Hankow—Special ...	... 4 cents per ton kilometre tapering to 2.13 cents.
Tientsin-Pukow—3rd class ...	... 2.7 cents per ton mile tapering to 1.13 cents.
Shanghai-Nanking—3rd class	... Principally special rates $15 to $35 per wagon of 35 tons or at the rate of about half a cent per ton mile.
Shanghai-Hangchow-Ningpo ...	... Special rates Shanghai-Hangchow $38 per wagon—about one cent per ton mile.
Peking-Kalgan—2nd class ...	1.6 cents per *li*—about 4.5 cents per ton mile.
Chengting-Taiyuan	... 4.05 cents per ton kilometre.
Kaifeng-Honan—4th class ...	... 3.5 cents per ton kilometre.

The above rates almost invariably apply only to open cars, for closed cars an additional charge varying from one cent to a cent and a half per car mile is made. The result is that closed cars get the bulk of carriage.

Coal.	
Peking-Moukden—3rd class ...	... 1¾ cents per ton mile.
Peking-Hankow—Special ...	... Tapering, 2 cents to 0.55 cents per ton kilometre.
Tientsin-Pukow—3rd class ...	... Tapering, 2.7 to 1.13 cents per ton mile.
Shanghai-Nanking—Special ...	... 35 ton wagons $13 to $28 depending upon station to and direction of haul. Resulting rate about 15 per cent. lower than rice rate.
Shanghai - Hangchow - Ningpo — 5th class	Special rates by zones ranging from 40 cents per ton minimum to $1.00 for 150 miles.
Peking-Suiyuan—Special ...	... Averages abont 1 cent per ton per *li*, or 3 cents per ton mile.
Peking-Suiyuan—Special ...	... $.009 per ton per *li* in Peking region $.011 per ton per *li* in north of Nankou, or an average of about 3 cents per ton mile.
Chengting-Taiyuan—Special ...	... 3.2 cents per ton per kilometre for anthracite and 3 cents per ton kilometre for soft coal.
Kaifeng-Honan—Special ...	... 1.3 cents per ton per kilometre for first 65 kilometres, and .6 cent per ton kilometres for remainder of haul.

Naturally imported goods take a higher classification and rate than do native products. They are in the nature of luxuries. To illustrate the rates upon machinery may be compared, using the car load basis.

Peking-Moukden—1st class ...	... 5 cents per ton per mile.
Peking-Hankow—Special ...	... Tapering rate, First 25 kilometres 4.34 cents per ton kilometre. Next 275 kilometres 3.17 cents per ton kilometre. Remaining distance 3.105 cents per ton kilometre.
Tientsin-Pukow—2nd class if not otherwise specified.	Minimum of fifteen miles, then tapering rate of 2.75 per ton mile down to 1.582 at 600 miles or thereabouts.
Shanghai-Nanking—3rd class if in small lots.	In carloads 5 cents per car mile, capacity up to 35 tons.
Shanghai - Hangchow - Ningpo—2nd class in small lots.	In carloads 50 cents per car mile, 30 tons capacity.
Peking-Suiyuan—1st class ...	... 2 cents per ton per *li*, or about 6 cents per ton per mile.
Chengting-Taiyuan—5th class (23 classes on this line)	... 1.25 cents per ton kilometre.
Kaifeng-Honan—4th class ...	... 3.5 cents per ton per kilometre.

These rates also are for open wagons. On the Peking-Moukden no mention is made as to open or closed wagons, but the officers in exercising their discretion in allotments of wagons secure the same result.



COAL TRAIN ON THE CHENGTING-TAIYUANFU LINE. NOTE THE LITTLE CABINS AT ONE END OF EACH WAGON. CHENGTING-TAIYUAN TRAINS HAVE NO "CABOOSES" OR "BRAKE VANS" ATTACHED

In order to give a more general idea of the rate level in China the following table of averages relating to the year 1916 is offered:

AVERAGE REVENUE PER TON. KILOMETRE.

Name of Road	AVERAGE REVENUE PER TON KILOMETRE							
	Agriculture Products	Animal Products	Mineral Products	Forest Products	Manufactures	Material for other Railways	Service Stores	Total
	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
Peking-Hankow ...	2.48	3.14	.95	2.71	3.19	1.01	.47	1.68
Peking-Moukden ..	1.99	2.40	.36	1.34	2.03	.99	.68	1.19
Tientsin-Pukow ...	.90	1.30	.77	1.12	1.38	.83	.42	.92
Shanghai-Nanking ...	45	1.30	.29	.48	.72	.25	.24	.49
Shanghai-Hangchow-Ningpo	1.80	3.82	.67	.60	1.46	.44	.27	1.29
Peking-Suiyuan ...	2.80	2.43	1.71	2.58	3.23	—	.73	2.26
Chengting-Taiyuan	4.04	5.18	1.92	2.92	4.24	1.84	1.17	2.35
Taokow-Chinghua ...	2.40	4.13	1.01	2.02	2.24	—	1.06	1.10
Kaifeng-Honan ...	—	—	—	—	—	—	—	2.12
Kirin Changchun ...	2.29	3.55	2.35	2.65	1.94	—	1.34	2.20
Chuchow-Pinghsiang	2.01	5.65	.95	9.12	2.80	2.16	1.51	.99
Canton-Kowloon ...	2.81	3.52	2.28	1.52	2.43	—	1.15	2.44
Canton-Samshui ...	—	—	—	—	—	—	—	21.19
Changchow-Amoy ...	4.16	24.23	2.20	7.58	6.44	—	.90	3.40
Chinese Government Railways ...	1.51	2.28	.96	1.37	2.31	.97	.55	1.33

How Freight Charges are Determined

A freight charge is arrived at by the combination of many considerations. The simplest of these are distance, class, and quantity. The foregoing paragraphs have given some evidence as to the elusive nature of classification, and that distance has some uncertainties connected with it. The factor of quantity it would seem is something material enough to be definite. Yet such is hardly the case. Live stock, vehicles, and a few other commodities are assessed by the head or per unit instead of by weight. A few light commodities upon certain lines are measured by actual weight. The Tientsin-Pukow lists as such, Chinese lanterns, dried leaves, hay, poultry, strawbraid, basketware. and a few other commodities. But as a rule the cargo is assumed to weigh the carrying capacity of the car. This means, of course, that the shipper tries to get every pound into a car that he can. In the case of covered cars, he is limited by the roof. Hence he favors open cars. In order to make something short of the sky the limit for loads on open wagons, at the end of the lead to loading tracks is placed a loading gauge beneath which the load must pass before it will be accepted by the railroad. Yet this is not limit enough in the case of heavy commodities. Rule 15 of the Peking-Mouken line, followed up by occasional weighing of suspected cars, ought to be sufficient to accomplish its purpose in this direction. It reads:

> "If cars are overloaded the owner will be fined 30 times the ordinary freight on the excess weight."

Fines are also imposed for false declaration of the class of the commodity, if the deception is discovered. The units of weight are the ton and the picul. The ton, is the English, or "long" ton, on all the lines except those using French as the secondary language. The latter use the metric ton; which is about three per cent. larger. Since the variations in scales are usually wider than this, and weights are so commonly estimated, the differences between these two units are ignored. The picul corresponds to the hundred-weight abroad, but consists of 100 catties, which, in turn, are one-third heavier than the ordinary pound.

Chinese demurrage rules are aimed to make cars live up to their classification as "rolling stock." Only twelve hours free time is allowed for loading or unloading upon any line. Upon the two lines out of Shanghai only six hours' time is allowed. Upon these lines, if unloading has not been commenced within four hours after placement, the railway reserves the right to switch the car to its godowns, unload same with its own forces, charge the handling to the consignor, and storage in addition if it sees fit. About a year ago, because of the increasing shortage of cars, orders proceeded from the Ministry of Communications that free time on all lines was to be reduced to six hours. But several of the lines objected that this limit put an impossible burden upon the merchant, and it is believed that this order has never been strictly enforced. Compared with foreign levels and labor costs in China, demurrage charges are heavy. They are not uniform as between the various lines, but are generally based upon the capacity of the wagon. The following table gives these rates for the more important lines:—

Line.	Kilometres operated	Free time allowed (hours)	Rate per car per day. Tons Capacity 10	20	30	40	Notes.
Peking-Moukden	955	12	$5	$10	$15	$20	
Peking-Hankow ...	1.316	do.	—	3	—	6	
Peking-Suiyuan ...	429	,,	3	6	—	—	Allowance made for storms.
Tientsin-Pukow	1.107	,,	3	6	9	12	
Shanghai-Nanking Shanghai-Hangchow Ningpo	597	6	—	—	—	—	Then unloaded by carrier at expense of consignee
Kaifeng-Honan ...	185	12	—	3	4.50	6	
Chengting-Taiyuan	243	,,	—	3	—	—	
Canton-Kowloon ...	143	24	—	—	5	—	Handles almost no goods.

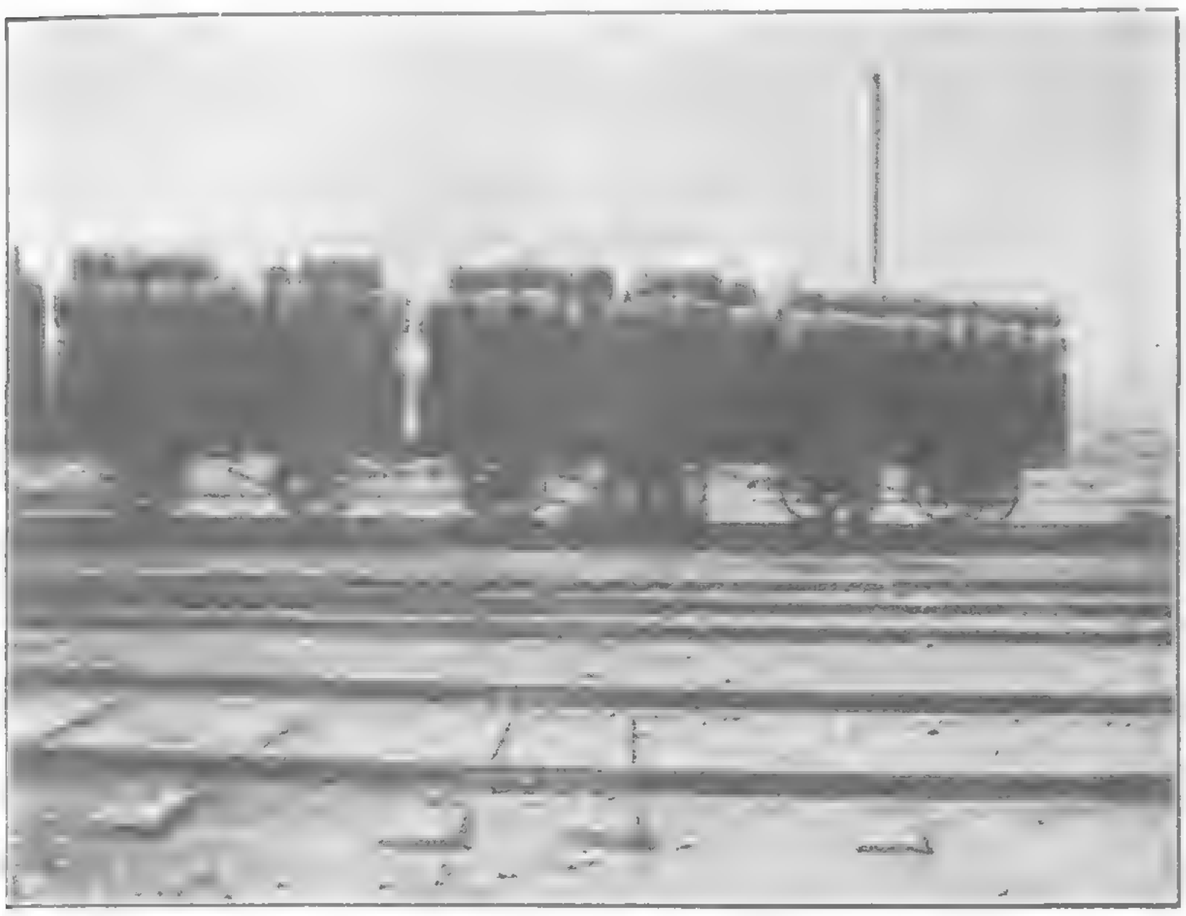
Chinese Railways not a "System"

All of the above discussion of rates and classes has dealt with traffic local to each line But so far as any general view of Chinese railways is concerned, the picture is as complete as it would be if all other goods traffic were included. In the usual acceptance of the term there is no "through" traffic in China. Although these five thousand kilometres of line are sometimes referred to as the Chinese system, they do not compose a system at all. They consist of fourteen independent lines—independent particularly in goods traffic matters. There is no such thing as a set of through rates. To be sure certain of the lines have made arrangements with their immediate connections for billing from certain points on its line to certain points upon a connecting line, this to apply to certain commodities. But for the most part, a through shipment will be billed by the originating line to its last



A 30-TON PEKING-MOUKDEN WAGON LOADED WITH WOOL AT TIENTSIN. DURING THE RAINY SEASON SUCH CARGOES ARE COVERED WITH MATTING

station in direction of measurement; there it must be transferred to the connecting line and rebilled to its furthest station, and there the process will be repeated until the shipment reaches its final destination. The Tientsin-Pukow, however, publishes two



THERE ARE NO REFRIGERATOR CARS IN CHINA, BUT EVERY BIG CITY HAS PLENTY OF FRUIT IN SEASON. THE CARS ABOVE ARE LOADED WITH PEARS. THE PEKING-MOUKDEN LINE HAS A LARGE NUMBER OF THIS TYPE OF WAGON

rates from points on the Shanghai-Nanking to Tientsin. Both rates are on flour, and include lighterage over the Yangtze river and handling charges at Nanking Ferry and Pukow. Upon all other commodities moving between these two lines the shipper must make all his own arrangements for getting his goods across the river. The Peking-Hankow line publishes several rates with the Peking-Moukden, the Chengting-Taiyuan, and the Kaifeng-Honan, principally concerning coal, but also including merchandise and live stock to a limited extent. There is now considerable through shipment between points on the Shanghai-Nanking and the Shanghai-Hangchow-Ningpo. But the extent of such traffic in 1916 was only two per cent. of the total. In that year the Peking-Moukden and the Peking-Hankow were practically the only lines which did not rebill practically everything received from other lines. The commodities billed inter-line were classed principally as mineral products—that is, coal, and salt, and manufactured articles.

Why There are No Through Shipment Arrangements

The principal reason for lack of through billing arrangements is the reluctance of the several lines to interchange equipment. There is such a shortage of cars that no traffic manager will permit his cars to leave his line if he can help it. Hence the rule is to transfer loads at junction points. In case of the joint rates which were explained above, considerable portion of the business goes through to destination without transfer, but even in these cases there are numerous rules limiting the distance to some fifty kilometres from the junction point which cars may run on the foreign line. There is also very considerable distrust among the lines as to the ability or the willingness of using lines to keep in good repair the visiting car. This ranges all the way from criticism of the quality of axle grease used by the other line, through doubt as to the mechanical ability employed to actual reflections upon the intent of the foreign line management. This, of course, merely evidences, the independence of the lines from each other, with the inevitable provincial spirit as a result. Total payments for interchange of rolling stock in 1916 by the Government lines were in round numbers $163,000. The prevailing rate is about $1.50 per car per day—until penalty rates begin to run, as they did at times. This means that something under 13,000 car days were involved, or some 350 cars throughout the year. In other words only 3½ per cent. of the total car supply was permanently away from home as a result of interchange. In the United States and Canada, where single systems are twice as long as the entire Chinese Government lines, about 50 per cent. of the car supply is permanently upon foreign lines.

Another obstacle to through shipments and through rates is the presence in China of so many depreciated bank notes. Lines which are able to make collections in silver will not accept in the rate division notes of this character. If the other line accepts notes and must pay the foreign line proportion in silver, the result is that it receives next to nothing for its portion of the through haul.

The Curse of Likin

A third impediment is the internal tax known as *likin*. To a large extent the more important lines have removed this obstacle to the movement of goods locally by means of a yearly lump sum payment to the provincial authorities. But some lines have not been able to arrange this. It is impossible for the originating line to estimate what the likin official will tax the shipment, so he cannot allow for this in the freight charge. The result is that the owner must send some one along with the shipment in order to haggle with the likin authorities, and hence nothing would be gained if there were through billing arrangements. A likin station is a most effective barrier to rail traffic. There is nothing new in the comment that this service is thoroughly inefficient and thoroughly corrupt. It has no standards, and the tax collected is largely the personal arrangement between the merchant and the inspector. Inspectors' wages are notoriously low, and he is expected to make large presents to his superiors in order to keep them assured of his loyalty. Naturally the inspector somehow, from somewhere, must get "his." Concealment of weights, of values and even of the entire cargo is, therefore, one of the necessary elements of a successful trader's make up, and above all he must protect an indulgent inspector from his supervising officers. Railed goods with the weights stencilled on the side of the car, the character and sometimes the value of the goods declared in the invoice, do not lend themselves to prevarication, and there certainly is no way for the car to go by an unfrequented path.

What Chinese Lines Chiefly Haul

Out of 13,000,000 tons of commercial business handled by the Government lines in 1916 nearly 8,000,000 was mineral products—coal principally. There were over 3,000,000 of agricultural products. Manufactures comprised 1,600,000. But the haul for agricultural products is so much longer than for coal that in ton kilometres the total for agricultural products was over 800,000,000 compared with 1,005,000,000 for mineral products. All told there were 2,300,000,000 ton kilometres of freight carried. The Peking-



TWO TYPES OF COVERED WAGONS, TAOKOW-CHINGHUA LINE. THE WAGON WITH HALF-OPEN SIDES IS USED FREQUENTLY FOR SHIPPING HORSES AND CATTLE. BOTH ARE READILY CONVERTIBLE TO PASSENGER USE, 3RD CLASS

Moukden carries nearly 40 per cent. of the entire mineral tonnage. The Tientsin-Pukow is the largest originator and carrier of agricultural products.



SOME OF THE INDUSTRIAL LINES HAVE VERY GOOD POWER. THIS CONSOLIDATION TYPE USED BY THE TAYEH IRON MINES WEIGHS 158,000-LBS.

It is rather difficult to generalize as to the character of the hauls upon the various lines beyond what has been indicated already. The mineral haul on the Peking-Moukden is principally between the Tongshan district and Chingwantao, with a considerable return haul of merchandise which proceeds on to Tientsin. On the Shanghai-Nanking there is a considerable business over the whole length of the line Woosung to Nanking, but principally the haul is between Shanghai and Wusih, Soochow and Nanking. On the Peking-Hankow there is a mineral haul of considerable length south from the Taokow-Chinghua and Kaifeng-Honan lines to Hankow, and north from the Chengting-Taiyuan line to Peking. The agricultural tonnage originates well to the south and moves to Peking and on to Tientsin. There is, of course, a long movement of rice parallel to the Grand Canal. But statistics do not show this for it is broken up between the several participating lines. The interested reader may perhaps be able to obtain some light from the following table:—

AVERAGE HAUL PER TON, 1916.

AVERAGE HAUL PER TON

Name of Road	Agriculture Products	Animal Products	Mineral Products	Forest Products	Manufactures	Material for other Railways	Service Stores	Total
Peking-Hankow	416	353	197	217	243	345	183	238
Peking-Moukden ...	190	174	121	103	151	140	115	131
Tientsin-Pukow	352	433	218	267	253	277	84	252
Shanghai-Nanking ...	224	229	245	261	218	83	138	218
Shanghai-Hangchow-Ningpo	62	112	160	147	111	45	81	94
Peking-Suiyuan	171	205	45	120	132	—	20	64
Chengting-Taiyuan ...	184	201	70	71	140	124	70	79
Taokow-Chinghua ...	87	66	76	55	104	—	17	75
Kaifeng-Honan ...	—	—	—	—	—	—	—	72
Kirin-Changchun ...	77	85	104	123	94	—	27	60
Chuchow-Pinghsiang ...	58	55	96	92	68	87	37	93
Canton-Kowloon ...	51	59	25	47	58	—	77	57
Canton-Samshui	—	—	—	—	—	—	—	9
Changchow-Amoy ...	19	18	15	9	18	—	23	19
Chinese Government Railways	260	272	124	154	183	152	89	155

The Origin of the Chinese Transportation Company

The railroad in England and America is responsible for the safe delivery of goods entrusted to its care. This is because of no kind-hearted impulse on the part of railroads there, but because the law compels them so to do. Many years ago in England when stage coaches first became common, it was a pleasant pastime for many nervy young gentlemen to hold up the coach and relieve passengers of their valuables. This became so common that it was fairly well understood that the stage drivers were conniving at the practice. Hence the English courts made it the rule that the stage coach must be the insurer of the passenger and of the goods of the shipper. When railways came into operation the same "common carrier" rule was applied to them, and it has so remained. But in China there was no such rule, and, of course, the railways have not voluntarily adopted it—except for pay. Their charges for such insurance furnishes one incentive for a shipper to send along with his shipment a servant to look after it. Some of the lines carry this servant free upon the wagon. One may see them lying on top of the loads in large numbers upon almost every train in China. The Shanghai-Nanking line which offers to carry at "Railway risk" rates charges such servant a third class passenger fare. For reasons above stated most of the shipments are in open cars, which offer no protection against theft. This again necessitates a watchman. If the journey is over more than one line, in most cases the goods must be rebilled at the junction point. This requires the presence of an authorized person to give shipping directions, pay freight charges, and supervise the transfer of loads. Then there is likin to pay, which requires personal negotiation if there is to be any profit left for the shipper. All of these things mean that a trusted employee must accompany the shipment.

No people with the commercial acumen of the Chinese would overlook an opportunity of this kind. The American express companies grew up for less than half the reasons given above. So in China companies corresponding to the express companies have come into being to supply the need of watchman, shipping and transfer agent, and tax dodger. They are commonly known as transportation companies. Frequently they are a branch of some large mercantile house. Sometimes they have as stockholders railway and government officials. They combine picul shipments into carloads and so secure the benefit of the lower rate. They often own large godowns and so can store products for which the owner has no facilities until wagons can be secured. With their official connections they can often secure wagons when other persons cannot. Ugly charges are often made in this connection, the same as in other countries where justice is not blindfolded. They can secure better terms from the likin inspector than the ordinary person, for in addition to their political influence they can make it worth the inspector's while, and he knows with whom he is dealing. A regular customer always is supposed to get preferred treatment. Besides, with their connections and branch offices in all important places they can make transfers of funds, provisions for re-shipment of goods and give better protection at a lower rate than can the isolated shipper. Frequently they conduct a banking business as a collateral line. On top of these advantages they have contracts with many lines—the Shanghai-Nanking, the Shanghai-Hangchow-Ningpo, the Tientsin-Pukow, the Peking-Suiyuan, and perhaps some others, for rebates ranging from two to fifteen per cent. of the regular rate depending upon the tonnage of goods shipped under their name. As a result the railroad gets practically no business at picul rates—these transportation companies gathering it all in, and combining it into car loads. At times it may pay the transportation company to offer a lower rate on car loads than the railway tariff provides in order to get tonnage enough to carry it up to a higher rebate percentage. Rebates on the Shanghai-Nanking line in 1916 amounted to over $81,000, or about 8 per cent. of total revenue from goods traffic. Upon that line transportation companies have been used by the railroad to secure competitive business. It is an extension of the compradore system into traffic solicitation.

Another advantage which the transportation company possesses in common with all large regular shippers is that of paying its freight bills monthly. Other shippers must pay in advance. After the close of each month several days are required to get in all invoices, and the time of making out the bill is something in addition. The peculiar genius of the Chinese for delay also serves well, so that a company doing a business of $100,000 a month is usually at least two months in arrears. In a country where current interest rates run from 12 to 20 per cent., two months' interest upon such a sum of money is a very tidy aid to a struggling concern.

There is no doubt that these transportation companies now serve a considerable public purpose. There is also no doubt that when the Government railways become organized into a system, with through billing arrangements, adequate car supply, common use of wagons, godowns, and proper control of its police forces that these transportation companies will disappear.

Who Makes the Rates?

A word as to the rate making authority. Theoretically the initiation of rates rests with the individual lines. Upon those lines with a very marked degree of foreign control the entire authority may be said to rest there. Upon all the lines the making

of rates is the function of the chief operating officer. The solicitation of traffic has not developed into an institution requiring a separate department, so far. In China railways cannot carry all the traffic offered them, so there is no need to solicit more. This statement is generally true, but not with respect to certain small lines. But as in other countries the shipper himself is as much interested in the rate as the railroad. As in other countries the absolute level of the rate is not so important as the possession of a rate more favorable than that enjoyed by a competitor. The result is that pressure is frequently brought to bear for such advantages, and no doubt there are many such rates which do not appear in the tariffs. At present the Ministry of Communications is the final authority on rate matters, but it would be too much to assume that political considerations never influence that body in its decisions. Hence while the foregoing paragraphs can be considered as descriptive, they cannot be guaranteed as anything more, or as final.

The rate level upon Chinese Government railways compares well with that in other countries. It is fostering a rapid increase of traffic in China. In spite of all the ills and plagues which have befallen this land during the past few years railway tonnage has steadily increased. The Shanghai-Nanking and the Tientsin-Pukow lines suffer a very severe water competition. But the certainty, the speed, the dependability of the railway service are bringing to it customers in ever increasing numbers. To be sure some very drastic rate revisions have been necessary. Probably no railway in the world offers generally lower rates than does the Shanghai-Nanking, whose average is under half a cent Mex. per ton per mile. The likelihood of damage in China is less upon rail than upon water. This will be surprising to shippers abroad until they witness switching operations in China. There is none of that crashing of cars together in Chinese yards, which make some foreign yards give forth a sound like a distant battle between artillery. Chinese engine drivers invariably handle the throttle carefully and there is little pulling out or pushing in of drawbars. To be sure, train speeds are slow which permits drifting in to stations and gentle startings. But when every allowance has been made the fact remains that the Chinese engine driver is a careful workman. He comes from the farming and artizan class. He has no family or political influence. Hence he is amenable to discipline. He gets good pay—five times that of an ordinary coolie, and is glad to hold his job. All this makes for good service.

Passenger Business

The relative importance of passenger traffic and goods traffic varies considerably upon the different lines. In the following table the lines are listed in order of highest importance of passenger business as of the year 1915.

PER CENT. OF REVENUES, PASSENGER SERVICE—PASSENGER, AND GOODS SERVICE—GOODS TO TOTAL OPERATING REVENUE.

Line.	Per cent. of Total Operating Revenue	
	Passenger Service Passenger	Goods Service Goods
Canton-Samshui	95.31	1.94
Changchow-Amoy	92.48	3.03
Canton-Kowloon	85.11	11.15
Shanghai-Nanking	71.13	24.62
Shanghai-Hangchow-Ningpo ...	67.72	28.60
Kaifeng-Honan	47.86	48.76
Tientsin-Pukow	41.65	48.68
Peking-Moukden	36.40	57.84
Kirin-Changchun	36.22	55.49
Peking-Hankow	25.25	71.55
Peking-Kalgan	22.95	69.74
Kalgan-Suiyuan	22.86	71.29
Chengting-Taiyuan	20.61	69.55
Taokow-Chinghua	17.12	80.43
Chuchow-Pinghsiang	16.66	81.37
Chinese Government Railways...	36.91	57.60

Passenger equipment differs as to style and finish upon the various lines, but these differences affect taste rather than anything material. On all the lines, three classes of equipment are recognized, First, Second, and Third. Upon the lines out of Shanghai and from Tientsin to Pukow, a fourth class, "coolie," is provided for. But the provision is nothing especial, consisting of open goods wagons or cattle cars, as a rule. Indeed, no inconsiderable portion of the third class travel is in such equipment, especially in the case of mixed trains, which serve local traffic needs. If passenger equipment were sufficiently plentiful, there is no doubt that much third class equipment would long ago have been impressed for certain forms of goods service. So the inference is not improper that third class travel in goods wagons is frequently quite as comfortable as in third class coaches.

Upon all the more important lines, the fast passenger trains carry restaurant cars, in which meals are served foreign style. Some of the more staple Chinese dishes may also be had on order. This branch of the service is supported almost entirely by the first class travel, other classes for the most part either carry food with them or buy from the vendors at the principal stations. Of such vendors there is always a horde at every station where the train hesitates. For the comfort of this class of travel, the more important stations provide gratis unlimited supplies of hot water. The stationary engines, as they appear to be to the uninitiated, seen upon the station platforms, are the boilers maintained for this purpose. They take the place of the ice water fountains found in American passenger depots and trains. With this hot water supply, the Chinese passenger can quickly brew himself a cup of tea—and then little else matters. The ubiquity of the tea pot, is attested by an incident, not infrequent, observed by the writer last summer at Peitaiho, the junction point for trains from the main line of the Peking-Moukden to the popular Peitaiho Beach. The branch line train was already twenty minutes late in departing. But the trainman who was making up the train could make no haste, for he had only one hand with which to manipulate the coupling lever, the other being occupied with a pot of tea.

First class carriages are of the coupé—private compartment—type. A partial concession is made to the American idea of open cars by placing compartments at both ends of some carriages leaving in the middle about half of the total car space for drawing room seats. Most of the coupés have seats convertible into beds at night. In a country where the travelling public is so cosmopolitan as in China, the privacy offered by coupés is highly desirable. As sleeping rooms, some coupés have two berths, others four berths.

Rates for the several classes vary considerably between the respective lines. The spread between classes and the variations between lines is shown in the following table which applies to the year 1916:—

AVERAGE REVENUE PER PASSENGER KILOMETRE.

Name of Road	Average Revenue per Passenger Kilometre									
	Ordinary					Excursion				All Passengers
	1st	2nd	3rd	Coolie	All classes	1st	2nd	3rd	All classes	
Peking-Hankow	3.05	2.25	1.21	—	1.25	2.51	1.68	.28	1.56	1.25
Peking-Moukden	3.37	2.20	1.07	—	1.15	2.30	1.33	1.01	1.22	1.15
Tientsin-Pukow	3.75	2.51	1.25	.60	1.18	3.32	1.78	.65	.77	1.18
Shanghai-Nanking	2.65	1.46	.70	.45	.70	1.67	.82	.40	.48	.70
Shanghai-Hangchow-Ningpo ...	2.53	1.24	.82	.47	.79	1.53	.72	.52	.71	.79
Peking-Suiyuan	4.48	2.94	1.46	—	1.51	1.39	1.38	1.44	1.44	1.51
Chengting-Taiyuan ...	4.67	2.53	1.62	—	1.65	—	—	1.12	1.12	1.64
Taokow-Chinghua	3.39	2.12	1.18	—	1.20	—	—	.90	.90	1.21
Kaifeng-Honan	3.65	2.51	1.20	—	1.23	—	—	—	—	1.23
Kirin-Changchun	3.62	2.59	1.46	—	1.54	—	—	1.09	1.09	1.54
Chuchow-Pinghsiang ...	1.64	1.11	.75	—	.75	—	—	.49	.49	.75
Canton-Kowloon	1.88	.88	.64	—	.67	—	—	—	—	.67
Canton-Samshui	2.10	1.78	1.20	—	1.26	—	—	—	—	1.26
Changchow-Amoy ...	2.60	1.86	.95	—	.96	—	—	—	—	.96
Chinese Government Railways	3.24	1.79	1.06	.52	1.06	2.48	1.24	.61	.76	1.06

As in other countries, the lowest class contains the bulk of the travel. "Coolie" rates are offered only upon three lines. This class should be considered merely as a subdivision of third class. The following comparison between China and certain foreign countries upon the basis of passengers carried distributed by classes has a certain interest. The distribution would not be materially different in China if the basis were passenger kilometres.

	1st Class	2nd Class	3rd Class	Other Classes
China	0.7%	3.3%	87.5%	8.4 (Coolie)
Austria	0.4	5.8	92.7	1.1
France	4.0	19.0	77.0	—
Germany	0.1	7.4	42.3	50.2 (4th class mostly)
India	0.2	0.7	89.8	6.6
Japan	0.3	4.4	95.3	—
United Kingdom ...	5.7	3.9	90.4	—
United States No distinct classes.				

Train Operation

Chinese trains are operated under the staff system. While this system involves more delays than the dispatcher system, it insures a much higher degree of safety. No train can leave a station until it has received information that the track to the following station is

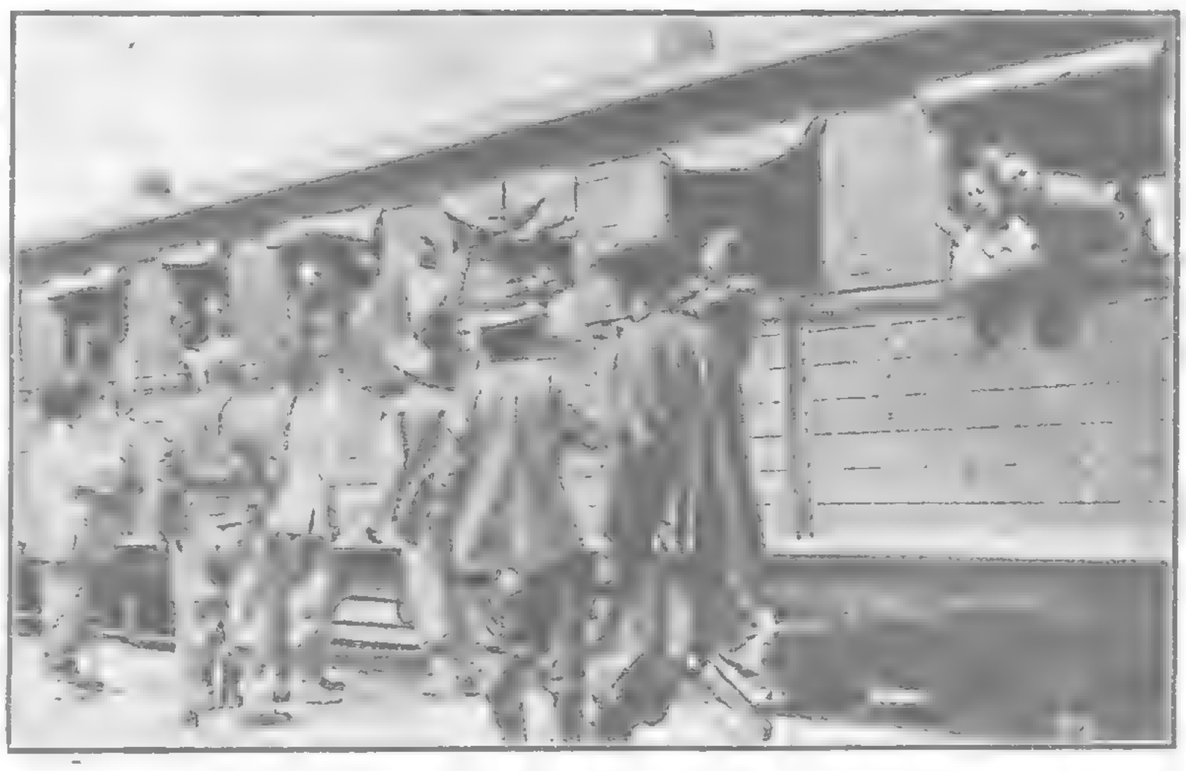


IN CONTRAST WITH THE "WHIFFET" ABOVE IS THIS MALLET CONSOLIDATION USED OVER THE NANKOW PASS BY THE PEKING-SUIYUAN LINE. WEIGHT 290,000-LBS.

clear. Enginemen handle the trains very gently, apparently having a very deft mechanical sense in handling the air-brake with which all passenger trains are equipped. Express trains are run between the important terminals, Peking to Moukden, Peking to Hankow, Peking to Tatung, Tientsin to Pukow, where connections are made to Shanghai. An average speed, including station stops, of 20 miles per hour is maintained. Between station speeds are limited to 40 miles per hour. This is guaranteed by the application of a speed register to a large percentage of the locomotives. Between Peking and Shanghai three separate lines are encountered, the Peking-Moukden, the Tientsin-Pukow, and the Shanghai-Nanking. Here we have a rudimentary start toward the system idea. These three lines have arranged train schedules so that through connections are made, with two changes of cars. At Moukden rather close connections are made with the South Manchuria trains for Port Arthur, Antung and Harbin. The connections other than these are considerably a matter of chance.



TYPE OF LOCOMOTIVE USED ON THE CHENGTING-TAIYUAN LINE. IN ROAD SERVICE THIS ENGINE RUNS CAB FOREMOST



THE NORTHERN RUSTIC PATRONIZES THE RAILWAYS, TRAVELLING THIRD CLASS

In many respects, however, the passenger service of the Government railways has progressed far toward system conditions. A circular tour ticket, good for two months, from Peking to Hankow, by boat to Nanking or to Shanghai over four different lines, and back to Peking viâ Tientsin has been in use for several years. Between Nanking and Shanghai the holder of the ticket has option of either the boat or the rail route. Passengers are allowed free baggage privileges to the extent of 120 catties—160 pounds—for first class, 120 pounds for second class, and 80 pounds for third class. Tickets are placed on sale only at principal stations however, and between these baggage may be registered, "checked." These circular tickets are sold at a reduction of about 30 per cent. on the local fares between the same points. A 30 per cent. reduction upon certain interesting side trips is open to the holders of these tickets up to their arrival at the appropriate junction point. At Tientsin, Shanhaikuan and Antung, baggage is subject to the inspection of Native Customs. Porters are at hand at all important stations.

A China-Japan circular tour ticket is sold, good for four months, between Shanghai or Hankow and Tokyo. This embraces arrangements with the South Manchuria, Chosen and Imperial Railways of Japan together with the Nippon Yusen Kaisha Steamship line. These China-Japan tickets are procurable also through the offices of the Canadian Pacific Ocean Service, the Pacific Mail Steamship Co., and the Toyo Kisen Kaisha.

Of late, the Ministry of Communications has been publishing guide books which contain full information concerning routes, fares, timetables, baggage, etc., together with matter descriptive of points of interest. These may be had upon application to the Ministry, Through Traffic Administration, and at leading tourist agencies.

Undoubtedly, China will soon become a Mecca for the tourist. This ancient land is still a land of mystery. Divided from the rest of mankind for thousands of years by mountain wall, desert waste and sea, she developed a civilization and a culture as antipodal to that of western countries as are the lands themselves. Everywhere the traveller finds his fundamental assumptions reversed. Every custom, every trait gives him a challenge. The thrill of discovery becomes the usual emotion. The desire for change can be gratified to exhaustion. Here the philosopher finds his basic premises denied. Social psychology seems contrary. In time one almost believes that the laws of physics are suspended. The historian may find the middle ages spread before him. The story teller has here an untouched wealth of fairy lore, adventure and biography. Chinese art is becoming vogue. Chinese architecture can show examples which were ruins when the mortar was still damp in Rhenish castles. There is a wealth of mountain peak and river gorge lit by an atmosphere of color which some day will be as well known in the galleries of the world as the Swiss Alps or the Arizona ranges. And above all there is the lure of China as the land of promise—placid, tantalizing, powerful; a land of intrigue, in transition, uncertain. It tempts the gambler either for wealth, or for reputation. It becomes the next great gaming table in world diplomacy and as such will have a fascination for those who would gaze upon the gamesters as well as for those who play.

The Working of the Chinese Post Office

The Annual Reports of the Post Office deserve wider circulation, giving, as they do, a comprehensive survey of conditions throughout China, and quoting figures which are in themselves an index to the progress of the country. There are two methods of compiling a survey of this nature. If that so well described by Sir Donald Mackenzie Wallace in "Russia" had been followed, we should doubtless have before us a reference to the Chinese Government Service of couriers (I Chan) of the Chou dynasty, about 3,000 years ago; to the runners of Cyrus in 550 B.C., as chronicled by Xenophon and Herodotus; and to the post houses of the Emperor Augustus. Prescott's "History of the Conquest of Peru" would surely be dragged in for a fleeting reference to the quipo or "knotted cord letters," by which news was transmitted as accurately as the Citizeness Defarge kept her gruesome record in Dickens' "Tale of Two Cities." The historian would then touch lightly on the detailed account by Marco Polo of the Chinese postal system for official despatches in the 13th century, and, with a possible comment on Mark Twain's graphic description of the pony express from St. Joe to Sacramento, he would arrive, by easy gradations, at the postal history of China.

One will look in vain in the Report for 1917, the latest available, for any embellishments of this kind, but to those who knew the China of 1896, before the establishment of the then Imperial Post Office, the account is as interesting as romance. A few comparisons are now given between totals for 1905, 1911 and 1917; these figures cover the whole service:—

	1905	1911	1917
Post Offices	437	957	1,683
Postal Agencies	1,189	5,244	7,420
Articles of Mail Matter Posted...	23 million	117 million	278 million
Parcels Posted (number)	314,000	955,000	2,640,000
Parcels Posted (value)	$8,500,000	$14,700,000	$35,000,000
Money Orders Issued	$1,200,000	$5,850,000	$21,500,000
Overland postal courier routes ..	121,000 li	319,000 li	432,000 li

It will be news to many that, treating the Shanghai Post Office only on its standing as a source of revenue from duty on postal parcels, it turns in a larger total to the Customs than 34 of the 50 ports in the Returns of Trade, exceeding even such an important place as Nanking.

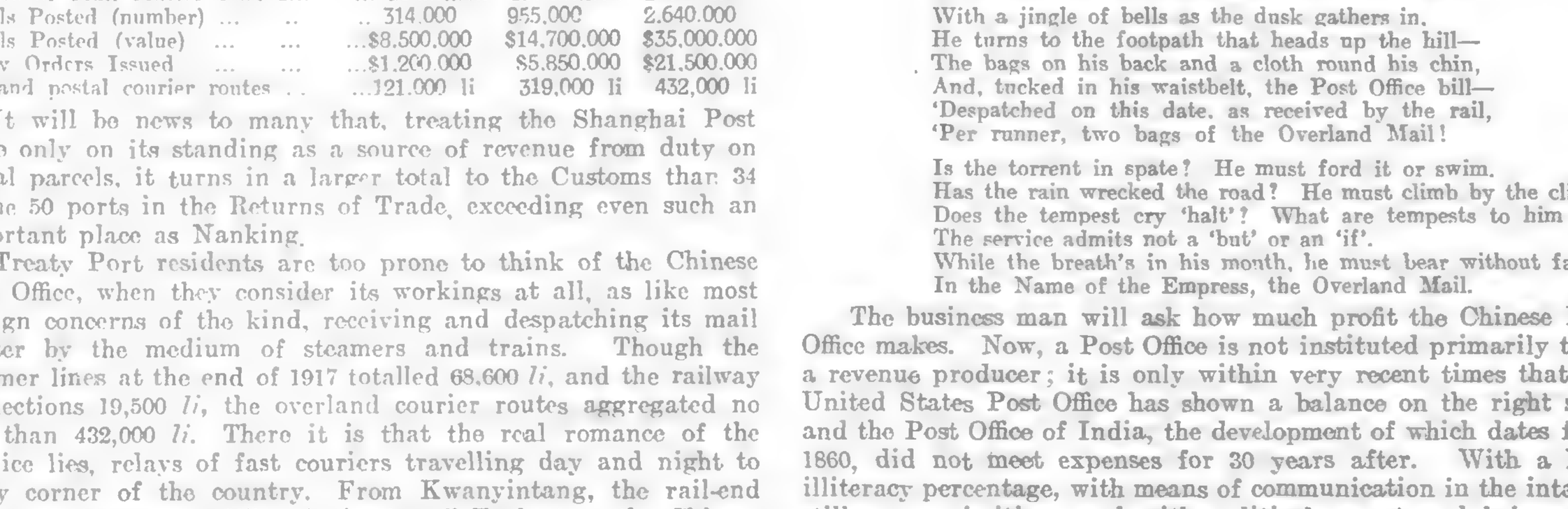
Treaty Port residents are too prone to think of the Chinese Post Office, when they consider its workings at all, as like most foreign concerns of the kind, receiving and despatching its mail matter by the medium of steamers and trains. Though the steamer lines at the end of 1917 totalled 68,600 *li*, and the railway connections 19,500 *li*, the overland courier routes aggregated no less than 432,000 *li*. There it is that the real romance of the Service lies, relays of fast couriers travelling day and night to every corner of the country. From Kwanyintang, the rail-end station in Honan, to Tihwafu in far-off Turkestan, the Chinese Post Office maintains a day-and-night courier service over 6,670 *li* (2,223 miles)—probably the longest single courier line in the world On one occasion when a mounted courier service was being experimented with from Urga to Kalgan, a foreign employé of the Chinese Post Office rode the distance of 3,460 *li* (1,150 miles) in 9 days, despite heavy rains; he had relays of Government animals at his disposal, but the feat is none the less noteworthy. Another foreign employé, now closer to civilization in Manchuria, tested a new courier line by leaving Chengtu at 5 p.m. and personally walking 130 *li* through the night without escort, arriving at the terminus at 6 a.m. The couriers themselves do wonderful work: there are humble servants of the Chinese Post Office in Szechuan who cover on foot an average of 120 li per day throughout the year, and there are others in the same province who, carrying 40 lb. of letter mails, do 180 *li* at a stretch, without any rest save brief stops for food. Where bridges have been carried away, and not replaced, the Service maintains wire ropes from bank to bank of the torrents, and no losses are known to have occurred in such situations. Camels, yak, mules, ponies, rafts made of inflated hides—in short, all possible means towards the object aimed at—are employed by the Chinese Post Office, and, with the risk of brigands, unruly soldiery, wild beasts, and even murder before them, the couriers carry on their daily tasks uncomplainingly. Cannot Kipling's "Overland Mail" be equally well applied to the Chinese Post Office couriers as to those of India?

In the name of the Empress of India, make way,
O Lords of the Jungle, wherever you roam,
The woods are astir at the close of the day—
We exiles are waiting for letters from Home.
Let the robber retreat—let the tiger turn tail—
In the name of the Empress, the Overland Mail.

With a jingle of bells as the dusk gathers in,
He turns to the footpath that heads up the hill—
The bags on his back and a cloth round his chin,
And, tucked in his waistbelt, the Post Office bill—
'Despatched on this date, as received by the rail,
'Per runner, two bags of the Overland Mail!

Is the torrent in spate? He must ford it or swim.
Has the rain wrecked the road? He must climb by the cliff.
Does the tempest cry 'halt'? What are tempests to him
The service admits not a 'but' or an 'if'.
While the breath's in his mouth, he must bear without fail,
In the Name of the Empress, the Overland Mail.

The business man will ask how much profit the Chinese Post Office makes. Now, a Post Office is not instituted primarily to be a revenue producer; it is only within very recent times that the United States Post Office has shown a balance on the right side, and the Post Office of India, the development of which dates from 1860, did not meet expenses for 30 years after. With a high illiteracy percentage, with means of communication in the interior still very primitive; and with political unrest and brigandage affecting particularly the parcel traffic, the Chinese Post Office



MAILS TRANSPORTED BY BULLOCK CARTS, ANHUI

ended 1917 with a surplus of receipts over expenditure of $1,422,000, as compared with $937,000 for 1916, and $302,592 for 1915. With the younger generation, now at school, once at years of discretion, what will the future not have in store for the Chinese Post Office? The total of articles of mail matter posted by the Chinese Post Office has already been quoted as 278 million for 1917, including postcards, newspapers, printed matter, samples, etc., which gives an average of considerably below one per annum for each member of the population. The "Statesman's Year Book" for 1917 shows an average of *letters only* per capita of 79 for England in the year 1915. China has done well, but she has still far to go.



MAILS CONVEYED ON RAFT OF INFLATED COW HIDES, SHENSI

The Chinese Post Office had at the close of 1917, 101 foreigners and 25,000 Chinese; the latest Customs figures at the disposal of the writer give a total for the senior Service of 1,148 foreigners and 6,030 Chinese, so that the proportion of foreigners to Chinese is about 1 to 5 in the case of the Customs and but 1 to 250 for the Post Office.

The German and Austrian employès of the Post Office—16 in all—consequent upon the declaration of war by China, were notified that their connection with the Administration was severed.

One of the most interesting entries in the Report for 1917 shows how the Chinese Post Office made possible the successful recruitment of Chinese coolies for service in France. The British Emigration Bureau at Weihaiwei alone issued through the Chinese Post Office for the last nine months of 1917 over $1,000,000 of money orders, for the payment of the monthly allotments to the families of the laborers. The Weihaiwei total mentioned not only formed the main support of some 25,000 families, mostly residing in remote parts of Chihli and Shantung, but contributed materially to the economic advancement of the localities so touched.

A few 1917 figures for the Shanghai District, which are mostly to be credited to the Foreign Settlements and Chinese City, may be interesting:—

Ordinary letters posted	17,500,000
Postcards posted	6,740,000
Newspapers and printed matter posted	23,740,000
Registered articles posted	1,400,000
Express articles posted	480,000
Parcels (number) posted	412,000
Parcels (value)	$6,600,000
Money orders issued	$900,000
Money orders cashed	$1,600,000
Collected from letter boxes, pillar boxes, etc. ...	12,600,000
Posted for local delivery	5,200,000

The present Shanghai Head Office has long ago become too small, and a site measuring about 7 *mow* has been secured, with frontage on the Soochow Creek, North Szechuen Road and Tien-ding Road, on which a new building, of at least twice the capacity of the present one, will be erected as soon as possible. At Nanking a new Head Post Office and three residences for the foreign staff are nearing completion; building is proceeding at Tsinan for office and residences, and arrangements have been made for new structures at Peking, Kaifeng, Taiyuanfu and Harbin. The first Service-owned District Head Office was completed at Hankow in 1917.

A few changes have been made in the tariff of postage. Postcards, of which the Report tells us there were 30 million for all China in 1917, are now charged 1½ cents instead of 1 cent. Incidentally, the figures of the Report for postcards despatched gives even Post Office men food for thought. Why should the populous province of Kwangtung, exposed for centuries to foreign influence, show a sale of only 183,000 postcards, while Kiangsu (excluding Shanghai and the country adjoining), with a much smaller population, disposes of 6,800,000, and Chekiang, also less populous, of 4 million?

The insurance of parcels, formerly compulsory, is now optional, and the fee charged has been reduced by one-half, in spite of the wreck of the s.s. *Hongkong* having cost the Post Office $26,000 for indemnities. Parcel Post Agreements with the United Kingdom and with Russia were completed, and came into effect in the year under review. Parcels to Sinkiang (Chinese Turkestan), carried by couriers for 2,000 *miles* were transmitted at a loss of 17 cents per kilo; the temporary rate adopted had, therefore, to be revised. The parcel traffic inland has been much hampered by the prevalence of brigands, often involving accumulation of parcels at a centre for weeks before despatch was considered safe.

Figures for 1918

The following shows approximately the total number of mail matter posted, money order transactions, postal establishments, railway lines, boat lines, and courier lines for 1918, as compared with 1917:—

	1917	1918. (Approximate)
Mail matter posted	278,381,400	302,245,700
Money order transactions ...	42,750,000	67,854,000
Number of postal establishments ...	9,103	9,315
Railway lines: in miles...	6,500	6,700
Boat line: in miles	22,866	23,146
Courier lines: in miles	144,000	148,000



MAILS CONVEYED BY A WHEELBARROW, KIANGSI

Practical Notes on the Financing of Import and Export Trade with China

By G. Passeri, Financial Adviser to the Bank of China

The subject upon which I am about to write is of paramount importance and the possession of knowledge of its ramifications is just as essential to the business man contemplating trade relations with China, as is the possession of those technical details which make of him an expert in any particular branch of commercial activity.

In commercial dealings with, or in, other countries, it is not always necessary as a preliminary to be acquainted with the internal working of their financial and monetary systems, as the peculiarities, if existing, are generally of such an unimportant nature that the indifference of the business man to the details of the financial operations originating from his trade is not only excused but usually admitted in practice, it being considered unnecessary to acquire expert knowledge of the intricacies of elements that will not influence the ultimate result of a transaction or that will influence it in a manner uniform and constant.

In trading with China, or in China, however, these elements will not only affect the results to an extent that will vary from one transaction to another, but in actual practice many will be the instances when success will depend solely upon the intelligent handling of the financial aspect of the operation.

In any ordinary transaction at home, the elements that have to be considered are fairly definite: (1) The price of the commodity being dealt with, while not always uniform, can at any given moment be ascertained and expressed in a value that in itself is not subject to changes, with the possible exception that in operating with foreign countries having a gold standard this expression may at times be subject to negligible fluctuations; (2) eventual freight and various charges can be reckoned with perfect accuracy, and (3) commissions, interest, or discount, and other banking charges that may have to be paid to the bank for the handling, or discounting, of bills, are either known or can be ascertained at any moment.

The commercial man is, therefore, in a position to accept or make an offer with perfect confidence in the result, as he can rely on the stability of the elements that form the distinctive nature of the transaction, at least for the period of time usually allowed for an answer.

Exchange—Some Peculiarities of Finance in China

In China, however, the elements of price are not only subject to the usual variations in value of the commodity itself, but the expression of that value, being in a standard of currency whose ratio to other standards circulating in this country is not fixed and cannot be depended upon, add another coefficient of instability to be reckoned with; while the price itself, expressed in any one standard, plus freight charges, banking commissions, interests or discounts, etc., that will constitute the "c.i.f. price" will be subject to another element of great instability, "the rate of exchange" between China and any other gold country.

To be more explicit, the new elements that have to be taken into consideration in China are:—

(*a*) The "internal exchange," or the ratio between the various standards circulating in China as mediums of exchange;

(2) The "foreign exchange," or the ratio between any one of the "silver" standards of China and any one of the gold standards of any foreign country.

The first element is not always present, or, to be more accurate, is eliminated in a few instances by the fact that the handling of it is left to the Chinese staff, attached to every firm here, that will undertake the risk for a consideration and will quote a price in a recognised and reliable currency; but the second element cannot be done away with and will constitute one of the difficulties, on the careful handling of which will depend the success of every external transaction.

Before we proceed to analyse the financial aspect of the international trade of this country it is desirable to familiarize the uninitiated reader with the exact meaning and constitution of the two elements that have just been mentioned:

(A) Internal Exchange—Currency

China is a country which does not possess a fixed standard of currency, and in which those existing circulate according to their intrinsic value. This value is not fixed by legislation or by custom, but is dependent upon that of the metal or metals entering into the composition of the medium of exchange, modified, naturally, like that of any commodity, by demand and supply. In this connection I have previously written myself: "The currency in China is chaotic, it forms the most absurd conglomeration of mediums of exchange, from a weight to a coin that has ever existed in any one country."

The metals that go to compose this currency are silver, copper, and occasionally iron, in some instances coined, in others taken at a given weight and fineness.

In this apparent confusion, however, it will not be difficult to find our way, particularly so if we limit ourselves to a research that will give us a superficial knowledge of the subject; that is, the one required in practice by the business man in China.

"Standards" of Currency in China

And in order to proceed systematically let us begin by recording as follows the various "standards" of this multiform currency:

The TAEL, which we shall be satisfied for the present to define as a weight of silver of a certain fineness, used in all banking and commercial transactions.

The DOLLAR, a coin in silver, introduced originally by foreigners and used by them in their everyday life. It is coined also by Chinese mints, and is being used as the currency for certain trades.

The SMALL COINS that serve the double purpose of subsidiary coins and represent also the standard of commercial transactions in certain districts.

The CASH, a coin generally of copper, that constitutes the standard for the everyday transaction of the lower class of people and, therefore, of the vast majority of them.

The TAEL represents always one Chinese ounce of silver, the sixteenth part of a Chinese lb. (catty), but as the scale adopted throughout China is not uniform we have taels whose notations in a foreign standard of weight are widely different, while the fineness of silver constituting the standard adopted in the various towns, and in the same town for various products, is also changeable.

If it is considered, therefore, that in the tael currency we have two elements, i.e., the "weight element" and the "standard of fineness" that are both subject to variations, it will be easy to understand that the combination of the two can give an infinite variety of notations.

But for the purposes of this article it will be enough for us to examine only a few of them, and particularly those generally adopted in treaty ports, with which anybody trading with this country is likely to come in contact. Before doing so, however, it will be as well to explain how the silver comes to China and how it is handled out here, silver being the metal entering into the composition of those mediums of exchange in which we are particularly interested:

Silver is imported from the United States, London, and occasionally re-exported from India to Shanghai, in bars, and is usually of an average fineness of 998, which is 17½ better than the English standard of $\frac{222}{240}$, i.e., $\frac{222}{240} + 17\frac{1}{2}\ \frac{239\frac{1}{2}}{240}$ 998.

It is sold at so many Taels, Shanghai currency, per every Taels 100, Canton weight of 579.84 grains troy.

The average price is taken generally as Shanghai Taels 111.20 for every Taels 100 Canton weight.

To express the value in another way: it would take a bar of American silver 998 fine, weighing 108.535 troy ounces, to make Shanghai Taels 100; therefore the Shanghai Tael would be equal to 520.968 grains of silver 998 fine. In actual practice, however, this expression varies, and if we base our calculations on the accepted notation of the Shanghai Tael we shall find that the Shanghai Tael is equivalent to 523.248 grains of silver 1000 fine, while again even this equivalent is not generally accepted, as we have always to reckon with that amount of uncertainty and inaccuracy that is always present in matters dealing with the manipulation of silver on the part of the Chinese.

On its arrival in China the silver is melted, with a certain quantity of alloy, into what are generally called "shoes" from their resemblance to the Chinese feminine footwear. These "shoes" are of an average weight of Taels 50 of the Tsaoping scale of 565.65 grains, the fineness being naturally dependent upon the quantity of alloy.

Both weight and fineness are ascertained, however, at the assaying office, and the proper notations are written in Chinese ink on each shoe. These shoes are packed in cases of sixty, and the notation is not changed until they are exported elsewhere when they will be re-weighed on a different scale.

The Mystery of the Tael

Of the Taels, for practical purposes, we can make two large divisions;

The Treasury Taels
The local Taels

In the first division we find:

The HAIKUAN TAEL, which is purely a currency of account introduced at the opening of the Inspectorate-General of Customs as a uniform standard to levy Customs duty ("Haikuan," in Chinese means Customs). Its weight, according to treaties, ought to be 583.3 grains, and the standard 1000 fine (theoretically pure).

Duties are, however, actually collected in the Taels generally current in any one place, according to a ratio fixed by the Inspectorate-General of Customs (Shanghai Taels 111.40=Haikuan Taels 100).

The KUPING TAEL, also a fictitious medium of exchange established in old times by the Government for the levying of all dues other than Customs duties, and as the standard for official budgets, etc. Its notations are in theory 575.8 grains of silver 1000 fine (Shanghai Taels 109.60=Kuping Taels 100) As there has been since the advent of the Republic, a marked tendency to introduce the "new dollar" in the place of this obselete and fictitious expression, it is to be hoped that soon the Kuping Tael will be a thing of the past.

The TSAOPING TAEL, as applied for the payment of duties contributed in kind, is simply a "weight" (565.65 grains). It is also used as the "weight element" of various taels—particularly the Shanghai Tael, as we shall see later.

We come now to local Taels, and, of these, I repeat, I will mention but those that are absolutely necessary. Foreigners in China keep their account with the Bank in one Tael currency, the recognised foreign Bank's standard of the place, and it will therefore only be necessary to know the notations of those adopted in the places where one will most likely carry on business:—

The PEKING TAEL (Kungfa Tael), adopted by the foreign Banks, is 555.7 grains of silver 1000 fine. Being a money of account it cannot be tendered over the counter as currency, but the Chinese staff of the Bank will accept the other Local Taels at the market rate of the day.

The TIENTSIN TAEL (Hanping Hwapao Tael), is 557.4 grains (Hanping scale) of Hwapao fineness 992 fine.

The CANTON TAEL is 579.85 grains, but there is not any definite standard of fineness and that constitutes a matter of arrangement between the parties concerned.

The HANKOW TAEL is the so-called "Foreign rule" Tael 554.7 grains of silver 967 fine.

The "SHANGHAI TAEL," so far as value is concerned, is composed of three elements: the weight is taken from the Tsaoping scale 565.65 grains, the silver is supposed to be 944 fine, and the result is divided by 98 (convention), as it is assumed that 98 Taels silver will cover a liability of 100 Taels.

It must, however, be understood that in no place in China is the silver tendered at the standard weight and fineness of any one local tael, as in actual practice all kinds of silver are accepted, but only at the value, as compared with the standard in which the payment has to be made.

Dollars and Small Coins

Of the DOLLAR there are many varieties, foreign and Chinese. Among the foreign dollars we find

The MEXICAN DOLLAR very popular with foreigners for their every day transactions, but used seldom in large commerciai transactions;

The STRAITS AND HONGKONG DOLLARS, popular in certain cotton growing districts, and

The CAROLUS DOLLAR, the first foreign dollar imported into China, of which comparatively few specimens remain in circulation now, at a large premium over other dollars of equal fineness and weight.

As the many varieties of Chinese Dollars coined by the various Provincial Mints were never popular outside of the Province of issue, owing to the instability of their intrinsic value, they are now withdrawn from circulation and demonetised, while the two Mints of Nanking and Tientsin are the only ones authorised to coin..

The NEW CHINESE DOLLAR has the following notations:

Weight: Tls. .72 Kuping scale (1 Tael = 575.6 gr.) or Tls. .73 Shanghai scale composed as follows:

Tls. .6408 pure silver, Kuping scale, or Tls. .71284, Shanghai Scale;

Tls. .0792 alloy, Kuping scale, worth Tls. .001828 of pure silver.

The charges for minting one Dollar are Shanghai Taels .0066746, and therefore the Mint par of the so-called new dollar is Shanghai Tls. .7213426.

We come now to the SMALL COINS, which are ten and twenty cents pieces of silver representing theoretically the tenth and fifth part of one dollar respectively, while in practice they circulate according to their intrinsic value and the general rule of demand and supply. You might get as much as six 20 cents pieces and some coppers in addition, or eleven 10 cents pieces and a few coppers for one dollar. Notwithstanding the fact that they are nothing more or less than a subsidiary coin, they circulate as standard in various provinces, and are used there for all sorts of transactions and particularly in payment for the products of the country.

Of late years the COPPER COIN, inscribed as one cent, and theoretically worth ten cash, has added one more element to the already multiform aspect of the currency.

The CASH was introduced in China as a currency, many centuries B.C. These coins are generally made of copper of unequal dimensions, owing to the different periods and mints where they were coined, but they circulate widely throughout China, quite independently of their exterior appearance, and they constitute practically the only instance, outside of the new dollar, that can justify the equal meaning of currency and coinage in this country. They are characteristic in appearance, a round disc of metal with a square hole in the middle, through which they are strung together in lots of a thousand to form a "Tiao," to facilitate both counting and transportation.

This small, dirty looking, battered piece of metal, a few specimens of which have been in circulation for a thousand years or more, constitutes the medium of exchange for the everyday transactions of 400,000,000 people, and their standard of life can be gauged by the ratio of the cash in normal times to the Tael, i.e., 1600/1800 cash to one Tael.

In addition to the above, there are large varieties of *Banknotes*, those issued by the foreign Banks and leading Chinese Banks, circulating at par; and those innumerable ones issued by the Provincial Banks, Private Banks, Cash shops, etc., which

constitute practically a currency in themselves, as they are taken only at a discount that varies from day to day and that in some instances amounts to 80 or 90 per cent. This state of affairs will gradually be improved, as the previously unrestricted issuing of banknotes is now subject to legislation.

"Internal Exchange" and its Pitfalls

Now that a cinematographic view of the currency of this country has been presented, without going into details that would be confusing, it is advisable to stop for a moment and think of the many transactions in internal exchange which must be possible with a currency of the sort outlined. Imagine the hundreds of Taels of different weight, and varying fineness of the many dollars, the kaleidoscopic assortment of small coins, and the cash, all of them capable of a changeable ratio to the other, all of them subject not only to their intrinsic value—which, after all, is the only steady element—but to demand and supply, old customs, and, in some cases, popular fancy. It is not to be wondered at that the foreign merchant in China is glad enough, whenever he can, to shift all the responsibilities of the internal exchange on to the Chinese staff attached to his firm.

And, as we mention the Chinese staff, it will not be out of place to see how it is composed: The man who is at the head of this staff is called the Compradore, and he is responsible for all the Chinese employed in the firm. He is, in general, a wealthy man, well known in Chinese commercial circles, and he is the "factotum" for all affairs with Chinese. At the moment of his engagement he puts up a large guarantee in cash, or other securities, and in his agreement it is clearly stated that he is responsible for every deal that the foreign firm will make with any Chinese introduced by him. He has with him his first assistants, called "shroffs," who keep him informed of all market prices and other details in which the firm might be interested, besides a large staff of accountants, correspondents, etc. He is generally paid at so much a month, not extravagantly, and has a commission on every transaction in addition to what he can make himself in the deal and on the financing of it; and is supposed to pay for his own staff.

It is not always possible, as mentioned before, to eliminate the element of internal exchange from every transaction while in some others it is preferable for the foreign merchant to take care of it himself in order to facilitate matters or to avoid paying too high a commission (or squeeze) to the Compradore.

Internal exchange must evidently be taken into consideration in all those commercial transactions that have as their object a commodity that is bought in another place than that of shipment, or—if bought in the same place—the payment for which is made in another standard of currency from that usually adopted by the foreign Banks and merchants.

It is common practice out here to keep current accounts with one or more foreign banks and occasionally Chinese banks, and these accounts are generally kept in Taels or Dollars of the recognized standard of the place.

It is obvious that if commodities could be bought in the same standard in the same place or in any other place, the transaction would be easy enough, as the purchase price could be paid by the drawing of a cheque, and the element of uncertainty would be eliminated. That very rarely happens, however, and what one has to consider in many instances is that while for example the gold price of the offer that was made abroad was based, say, on the Shanghai Tael and the ratio between this tael and the gold standard of the country where the commodity is going to be exported, the purchase price of the commodity itself has actually to be paid in a different standard, whose ratio to the Shanghai Tael, while known at the moment the offer was made, is subject to wide fluctuations.

While it would be impossible to give advice as to the best manner of safeguarding oneself against this element of uncertainty, as the efficient working of it can only be acquired with actual practice, it may not be out of place to give a few examples, taking only into consideration those standards that were enumerated when dealing with the subject of the currency of this country.

The Intricacies of Buying for Export

Supposing a business man in Shanghai offers abroad a certain commodity, leaving the element of foreign exchange out of the reckoning for the present, we say, therefore, that he has sold the commodity in Shanghai Taels. Let us see then in how many different standards or combination of standards, he may have to pay to obtain the goods from the producer, the farmer, the merchant or the middleman:

(1) If the commodity comes from another place than Shanghai, he may have to pay in the TAEL CURRENCY of that particular place—and as there are a few hundred notations of Taels it will be easy to imagine the possible combinations. (It must be mentioned here that as even in the same place different kinds of Taels exist, it may be possible that the particular commodity has to be paid for in a Tael of a different scale and fineness from the one in which an account is kept at the Bank.)

This first instance is one illustrating the "Taels exchange quotations," or the ratio of the different Taels at a given moment, a ratio is always quoted, in the case of the Taels standards of the principal treaty ports by the foreign Banks, while the others are handled less efficiently by the Chinese banks and exchange shops. If we except the Haikwan Tael and the Kuping Tael, the ratio of which to the Shanghai Tael has already been given, the Taels whose quotations a merchant out here is most likely to come across are:

The Shanghai Tael
The Peking Tael
The Tientsin Tael
The Hankow Tael
The Canton Tael,

and while the quotations for any one day could easily be given it is preferable to refer to the notations I have put down for these different Taels elsewhere, and explain that the actual ratio is always based on three elements, two of which are constant and easily ascertained, and the other variable within certain limits. The constant elements are:

The quantity of fine silver in the different Taels;

The amount representing the shipping cost, insurance, etc., for moving this silver from one place to another

The variable element is:

The one issuing from demand and supply, limited in theory to the extent of the second constant element just mentioned, i.e., the shipping cost, as it is evident that if this limit was exceeded either way, actual silver could be shipped with profit.

(2) The merchant may have to pay for the commodity in Dollars either in Shanghai itself or elsewhere, but in either case, he can obtain the quotations from his Bank. If we except here the Straits and Hongkong Dollars and the few specimens of Carolus Dollars still existing that are popular in certain districts and that therefore command at times a high premium, the ratio of the Mexican Dollar and the new dollar, whose quotations are almost always identical, is based on their intrinsic value. Therefore while in theory subject to the mint par—which in the case of the new dollar is Taels Shanghai .7313426—to the shipping charges, and to demand and supply, in practice this last element has much more play than in the case of the Tael, as it is not always easy to get dollars minted and when there is a special demand for dollars for the financing of certain trades, during particular seasons of the year (for instance cocoons in May, cotton in September-October) it is quite customary to see the quotations of the Dollars in Taels from 3 to 5 per cent. above mint par.

(3) Or again, the merchant may have to pay for the commodity in small coins, in which case he cannot have recourse to the foreign Bank for the quotation, and would have to go to the Chinese Banker or exchange shop; but at this stage, while a few foreign merchants still do their own transfers, it is advisable for the

merchant to place himself in the hands of his compradore. The Compradore might squeeze, but it might be a safer and wiser course in the end.

(4) And the same remark applies if the merchant had to deal in Cash or Tiaos, as these are currencies with which the Chinese are perfectly familiar. They have, however, quite a number of secrets hidden from the foreign merchant, secrets that are existing in fact or secrets that might be created for one's special benefit, and it is not always safe to try and tread on unknown ground, particularly so where money is concerned.

(5) We have examined so far the combination of only two mediums of exchange, but, without going into details which would only create confusion, I may mention that in order to get products from a place in Szechuan, for instance, the money paid by the foreign export firm in Shanghai to its Compradore is exchanged six or seven times before it gets to its destination.

It would not be within the scope of these notes to deal with this subject from a Banker's point of view, as such would lead to the study of a problem that is considered one of the most difficult in the profession, and it will be enough to secure acquaintance with the outer edge of the question, the one with which merchants have to come in contact.

RATES OF EXCHANGE

SHANGHAI, Saturday, 19th October, 1918

1—BAR SILVER Spot.....49½ = 4/10½
2— DO. Forward.....no market
3—MEX. DOLLARS.....73.825
4—NATIVE INTEREST 16

H. & S. B. C. Opening quotations **9.30** *a.m.*

5—Banks' Selling Rates

6—LONDON.....T/T.....5/1
7— „ .....Demand 5/1¼
8— „ .....4 m/s 5/1½
9—INDIA .....T/T..... .... 338¾
10—FRANCE .....T/T.....666
11—AMERICA .....T/T.....121
12—HONGKONG.....T/T..... ...68
13—JAPAN .....T/T..... ...44⅞
14—BATAVIA.....T/T.....277
15—STRAITS .....T/T.....46

16—Banks' Buying Rates

17—LONDON.....4 m/s Credits...5/3½
18— „ .....4 m/s Docts ... 5/3¾
19— „ ... .6 m/s Credits.. 5/4
20— „ .....6 m/s Docts ...
21—FRANCE .....4 m/s 697
22—AMERICA ... ...4 m/s L/c.....124¾
23— Docs 125½

EXCHANGE BROKERS ASSOCIATION, SHANGHAI

(B) Foreign Exchange: "Rates of Exchange" and what they Mean

The relation of gold and silver is based on the comparative prices of the two metals, and in our particular case on the price in gold (pence) at which the silver is quoted in London. From this, by a series of calculations that are not interesting and which I omit in consequence is derived the so-called T. T. rate on London, or, in other words, the rate at which the local Banks will sell a telegraphic transfer on that market. This rate is expressed in shillings, pence, and fractions of a penny, these being rather peculiar since in fact it would be much easier and probably more correct mathematically to express it in taels and decimals of Taels.

As an illustration, when one is told that the T. T. rate on London is 4/8¾ it will mean that a local bank is prepared to sell T. T. on London giving for every tael 4 shillings 8 pence and 3 farthings. From this rate are derived all the other different rates of exchange with foreign countries, which the Exchange Brokers' Association publishes every morning at 9.30 o'clock. After the receipt of the London telegram the quotations are printed on a slip that is sent round to the different banks, merchants, etc. in the place. Being an accepted custom for the Hongkong & Shanghai Banking Corporation to give out these rates one will find at the top of the slip the mention H. & S. B. C. Opening quotation. I give in the preceding column a specimen of these slips and will analyse it in detail.

For the sake of convenience I place on the left hand side progressive numbers so that I can refer to them in the course of this explanation.

(1) *Bar Silver Spot 49½ equal to 4/10½.*

This is the so-called parity of silver, and it means that—with the charges as in normal times—silver being 49½ pence per ounce troy in London, the price in Shanghai per Shanghai Tael would be 4 shillings 10 pence and two farthings.

(2) *Bar Silver Forward—no market.*

In normal times a quotation is given for forward silver delivery in two months, but it is omitted at present owing to prevailing circumstances.

(3) *Mexican Dollars 73.825.*

This is the market rate of Mexican Dollars into Shanghai Taels, and it means that Shanghai Tls. 73.825 are equal to Mexican Dollars 100.

(4) *Native Interest 16.*

This rate, which is an indication of the state of the money market, means that the native banks pay interest at the rate of Tls. 16 per Tls. 1,000 per day (5.84 per cent. per annum).

(5) *Bank's Selling Rates.*

This means the rates at which the banks will sell gold.

(6) *London T. T. 5/1.*

This means that for one Shanghai Tael the Bank will sell 5 shillings and 1 penny, by telegraph, payable in London, the same day. This quotation is taken from the above parity (1), and in normal times it should be at little variance with the same, the small difference then present being due to demand and supply, but as the war has created abnormal conditions everywhere we have not escaped its consequences out here.

(7) *London Demand 5/1¼.*

The ¼d. difference between the T. T. rate and the demand rate is due to the fact that owing to the difficulties of communications existing at the present time it takes longer to cash a demand draft at home than it did in pre-war times when the difference was only 1/8d., representing the interest of one month.

(8) *London 4 months 5/1½.*

The same remarks as above apply here only for the longer period of four months.

(9) (10), (11), (13), and (14): The rates on *India, France, America, Japan, and Batavia* are all based on the London T. T. rate of 5/1d., and the respective cross rates between India and London, France and London, New York and London, etc., are telegraphed out here at every important change.

The actual meaning of these rates is the following:—

India—Rupees 338¾	...	...	...	equal Tls.	100
France—Francs 666	...	...	...	„ „	100
America—Gold $121.00	...	...	...	„ „	100
Japan—Tls. 44⅞	...	...	...	„ Yen	100
Batavia—Florins 277	...	...	...	„ Tls.	100

(12) *Hongkong T. T. 68.*

This rate indicates that Shanghai Taels 68 are equivalent to Hongkong $100.

(15) *Straits T. T. 46.*

Meaning that 46 Shanghai Taels are equivalent to Singapore Dollars 100.

(16) *Banks' Buying Rate.*

This means the rate at which the banks will buy gold.

(17), (18), (19), and (20): These various rates on London are the rates at which the Bank will buy bills on that port either on open credits or documentary bills at 4 and 6 months' sight.

(21) *France Four months 697.*
The same remarks apply here as above.
(22) and (23) *America 4 months credits and documents.*
The same remarks as above apply.

I have mentioned already that these rates are the opening rates of the Hongkong & Shanghai Banking Corporation, but it does not follow that these are the rates at which other banks will sell or buy, the same being dependent upon their own position and other factors that will make any one of the banks operating on this market a good buyer or a good seller as the case may be. Nor are these the rates that the Hongkong & Shanghai Banking Corporation itself will quote during the whole day, as demand for T. T. or supply of bills may be so preponderant as to force the bank to alter its rates. Part of the mechanism of exchange, as it works not only in Shanghai but in other treaty ports where the foreign banks have their branches, is the telegraphing of the Shanghai T. T. rates on London every morning to Tientsin, Hankow, Peking, etc., where they are converted into local rates by applying the Shanghai-Tientsin, Shanghai-Hankow, Shanghai-Peking, etc., tael cross rates.

Banking in China

In order to complete these notes on the financing of the international trade of China it will not be out of place to say something about Banking here, particularly as Banking is an institution widely spread in this country on account of the multiform aspect of its monetary system. The scope of a bank in China ranges from the vast business of the Government banks to the restricted dealings of the so-called exchange shops.

The Government banks, two in number—the Bank of China and the Bank of Communications—are both limited liability companies which have been granted special prerogratives by the Government which allow them to act as the Government's fiscal instruments in this country.

The private banks are generally opened by merchants who wish to keep to themselves the profits accruing through the handling of the money constituting the object of their commercial transactions. As a general rule they do not openly transact banking business but in practice they accommodate their clients with overdrafts and loans.

Still another class of banks generally called "cash" or "exchange shops" transact general banking business, while the smaller ones confine their activities chiefly to the exchange of dollars, subsidiary coins, cash, and occasionally the handling of taels.

The business done by the native banks consists of current accounts, fixed deposits, loans, overdrafts, and, of course, transfers of money. The interest is generally reckoned at so much per mille per month and as a rule is much higher than at home.

All these native banks generally issue the so-called "native orders," which are nothing else but a promise by the bank to pay a certain amount within a stipulated period—ten days as a rule. These promissory notes are vastly used throughout China and are commonly accepted by the foreign banks.

There has been great movement during the last few years particularly in Shanghai, to establish new Banks or reorganise old ones on foreign lines, and the success that has so far been attained is quite encouraging. The names of those Banks which deserve every encouragement in their enterprise are:—

The Bank of Canton;
The Chekiang Industrial Bank;
The Salt Merchant Bank;
The National Commercial Bank;
The Shanghai Commercial & Savings Bank;
The Chung Foo Union Bank;
The Ningpo Commercial Bank;
The Chung Wha Commercial and Savings Bank;
The Chin Chen Bank;

These banks have lately formed a Bankers' Association which the Bank of China and the Bank of Communications also joined.

The following are the foreign banks doing business in Shanghai and other ports in China:—

Chartered Bank of India, Australia and China (British);
Hongkong & Shanghai Banking Corporation (British);
Banque de l'Indo Chine (French);
Russo-Asiatic Bank (Russian);
Banque Belge pour l'Etranger (Belgian);
International Banking Corporation (American);
Banque Industrielle de China (France);
The Mercantile Bank of India, Ltd. (British);
Nederlandsche Handelmaatschappij (Dutch);
Yokohama Specie Bank (Japanese);
The Bank of Taiwan (Japanese);
The Bank of Chosen (Japanese);
Mitsubishi Bank (Japanese);
Mitsui Bank, Ltd. (Japanese);
Sumitomo Bank (Japanese);

Within the last few weeks the representatives of the Asia Banking Corporation, a new American enterprise, have arrived with a view to opening branches of that institution throughout China and every success is to be wished them.

The ordinary transactions of Banks in the Far East do not differ in the principal characteristics from those of Banks at home, and it is only when they refer to Chinese business or to import and export business that peculiarities are introduced. Although the business of the foreign banks with the Chinese is carried out through the Compradore under his own responsibility, it is necessary for the banks to safeguard themselves by creating a special bureau of information where all details concerning the actual or prospective clients of the Bank are kept.

The Compradore himself has always to put up a guarantee at the moment of his engagement, and his guarantee is partly in cash in the form of a fixed deposit bearing generally 5 per cent interest and partly in other securities.

My personal experience is that a very small percentage of the Chinese obligations have eventually to be made good by the Compradore, as transactions with Chinese can be considered absolutely safe so long as the proper safeguards are taken

Chinese banks deal vastly with foreign banks, and, while those of a purely Chinese character arrange their accounts with the Compradore under his own responsibility, the leading Chinese banks, particularly those carrying on business on foreign lines. are treated on the same footing as foreign banks and are allowed to clear at the arranged intervals while the daily balances are simply carried over.

Commercial Firms and Banking Operations

With regard to business with foreign merchants, it is customary for the bank to establish at the beginning of every year the maximum limit of credit to be granted to them against security and in blanco.

For your information I will describe in detail how facilities are accorded to export and import firms so that a correct idea may be formed of the manner in which the transactions are carried out.

Supposing an export firm makes an offer for goods at home and this offer is accepted, the firm at home may, or may not, open credit through a bank in favour of the firm here. If that is done the firm here will probably ask for facilities from the bank with which the credit has been opened, but, if there is no credit, the firm will ask for facilities from its own bank.

In either case, and provided it is within the limits of the overdraft accorded to any particular firm, the bank will grant what is generally called a "packing credit," or, in other words, will allow the firm to draw on the bank to the extent of practically the full amount constituting the value of the goods to be shipped.

The firm will be asked to sign a promissory note due on demand, the interest charged being from 7 per cent. to 8 per cent. while on the same promissory note the goods to be shipped will appear as security. The goods themselves may be stored in the firm's own godown or in a neutral godown, but in either case, they are assigned to the bank. Insurance is covered by the firm, and in general the policies are deposited with the bank.

These arrangements will last for the period of time necessary for the firm to buy up the goods, sort them if necessary, pack them and ship them away at the first available opportunity.

As soon as the firm has shipped the goods and has obtained a bill of lading for them, as well as insurance policies, consular invoices if necessary, etc., they will draw the bill at 90 days', 4 months' or 6 months' sight, as the case may be, for the full amount of the invoice, naturally including the charges. If a credit has already been opened through a bank this bill will be drawn on the bank that originally opened it; if no credit has been arranged the bill will be drawn on the firm to whose order the goods are shipped.

In either case, the firm will hand over to the bank here, from whom they obtain the packing credit, their bill—accompanied by all documents (hence the denomination "documentary bills") if credit was not opened in the first place—; while part of the documents may be shipped direct to the bank who opened the credit, if credit had been opened.

The firm may wait till the last moment to settle the exchange with the Bank for the sale of the bills, or may have done so in advance for that particular business; or again, may ask the Bank to place them against any of their outstanding contracts.

At the moment when the Bank receives the bill with the documents attached they will transfer the amount from gold into silver at the rate settled, and will credit the firm in taels against the packing credit originally granted.

It will be seen from the above, therefore, that banks are in the habit of granting excellent facilities to their customers, the only competition possible in this direction being the interest that the firm has to pay on the packing credit and the eventual quotation of a good rate of exchange.

Import Firms and the Banks

With regard to import firms, facilities practically just as good as those previously mentioned are granted as a rule. It is common practice for the import firms sending merchandise to the Chinese dealers to quote gold prices to avoid risk of the oscillations of the rates of exchange.

In ordering the goods at home the import firm may or may not open a credit in favour of the sellers, but there is no practical difference in the handling of the transactions at this end.

In either case the bill and documents for the goods shipped from home will be sent here to a bank—the bank who opens the credit or the bank designated by the import firm.

On the arrival of the draft and documents here the bank will advise the import firm, which, in turn, will inform the Chinese dealer.

In normal times documents will arrive here much in advance of the goods themselves. As soon as the goods arrive the firm will ask the bank to let them have the shipping documents, which is generally done; the firm will attend to clearing the goods through the Customs, paying the duty and eventual storage in a public godown from whom is obtained a landing account to the order of the bank and which is sent directly by the godown company to the bank itself.

To the Chinese dealer is left the option of settling the exchange involved in the transaction.

As goods are generally ordered in large quantities it is customary to allow the Chinese dealers to take delivery of them in partial lots, paying in each case the proportionate equivalent in Taels to the bank for account of import firms.

Supposing 100 bales of piece-goods have been originally ordered, have arrived here, and been cleared through the Customs, and the Chinese dealer wants only to take delivery of 10 bales. To do so he will obtain a "native order" generally due 10 days after—from one of the native banks with whom he is dealing—for an amount in taels corresponding to the tenth part of the invoice price transferred from gold to silver at the rates settled plus all charges and interest.

This native order will be handed to the import firm which will give a delivery order on the bank, sending to the bank the native order at the same time to be credited to their account on due date. The bank, after having ascertained that the native order is o.k., will give a delivery order on the godown company to the Chinese dealer, while the godown company will make the necessary entries on the landing account. It may happen that at the expiration of the period at which the original bill from home was drawn on the firm—90 days', four months', or six months' sight—the goods are not all delivered, in which case it is customary to allow a renewal.

As soon as all the goods have been delivered a certain amount in taels corresponding to the approximate total amount of the original bill, plus all charges and interest, will stand at the credit of the import firm. The bank will then retire the bill and make out the statement at the rates settled, plus interest, charges, and commission.

This amount will be debited to the import firms' account. The difference between the two amounts will constitute the profit of the foreign firm on the deal. This arrangement is ideal so far as the merchants are concered.

General Business

Loans and overdrafts are granted here on all "approved securities" and, as the different banks place their own meaning on the qualification, it would be very hard for me to generalise

However, loans and overdrafts are granted quite freely to the clients of the bank on known shares and other securities quoted by the Shanghai Stock Exchange.

The margin that the bank will take in this case varies from 30 per cent. to 50 per cent., according to the stability or otherwise of the securities themselves.

Loans and overdrafts are also granted on export goods in own godown or neutral godown on which packing credits has not been obtained; also, on import goods that have come out without a bill, or those that have been already paid for.

In this case the margin ranges from 10 per cent. to 60 per cent. reckoned on the market price of the goods on the day on which the loan or overdraft has been granted and it is dependable on the perishability of the goods themselves.

In both cases for loans or overdrafts granted on shares or similar security, or on goods in general, the margin has to be kept by the firm, and the bank reserves, therefore, the right to demand a reduction of the amount of the loan or overdraft or the provision of additional security whenever the market price of the security itself has gone down and has reduced the percentage of margin accordingly.

It must, however, be understood that a certain elasticity is allowed to this margin and that the bank will not as a rule annoy a good customer every day in the week for its margins

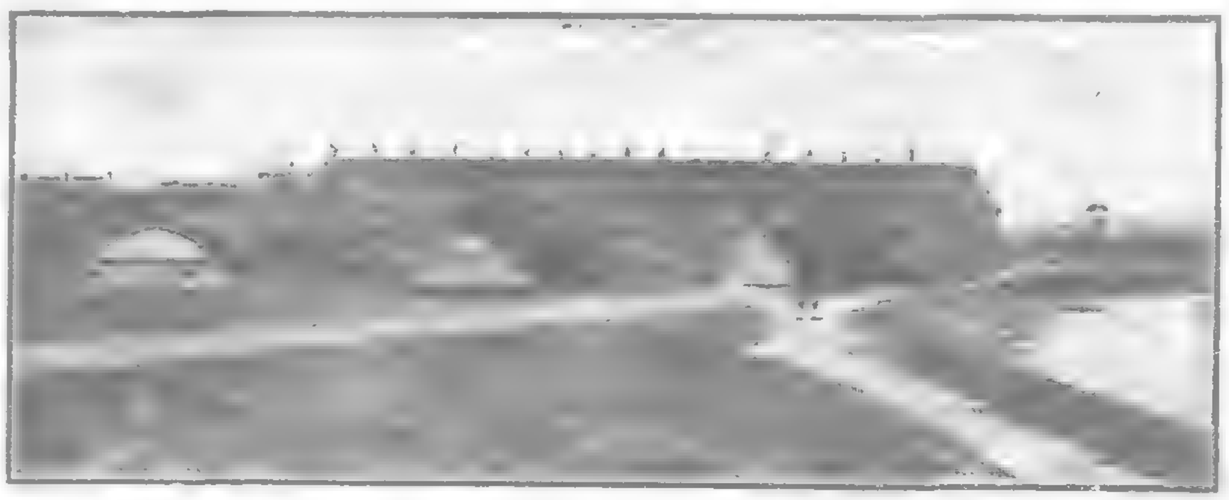
Current accounts are kept with the foreign banks in taels and dollars, and with a few of them in gold currency. The majority of the banks will not pay interest on dollar accounts but some of them do, while on tael accounts from 2 to ½% is paid on the daily balances.

Fixed deposits are accepted in taels and dollars and occasionally in gold curreny and while the question of interest is a matter of arrangement, in general the following are the rates:

3	months	from	3% to 3½%
6	,,	,,	4%
12	,,	,,	5%

Collections of bills is generally undertaken, drawn either on other parts in China or abroad, and the commission charges vary from ¼% to 1%.

Many other details could be given with regard to the work of the foreign banks here, but as they do not differ from those in similar transactions at home they would have no interest for the reader.



BRIDGE RENDERED USELESS BY THE COMPLETE SILTING OF A RIVER IN SHENSI. MANY SUCH IN CHINA.

China's Taxation of Imports and Exports

The Maritime Customs: the Native Customs system: Likin, and other charges.

Customs Procedure : What is required of the merchant to-day.

BY GERALD KING

The subject of Customs procedure in China is so large and so complicated that it must be dealt with under several heads. There is no one Customs Service, and goods which have been taxed by one of the several Customs are frequently taxed again by others. The Chinese Customs are divided into the Maritime or Foreign Customs : the Native Customs under foreign control : the Native Customs not under foreign control : the likin system : and various other taxes on merchandise in transit. Before proceeding to examine them it is necessary briefly to recapitulate the circumstances under which these various tax offices came into official being *vis-à-vis* the foreign trader.

Early Customs Transactions with China

When a ship arrives from abroad in Chinese waters, she cannot proceed to any anchorage and there discharge her cargo, but must proceed to one of the Treaty Ports. These are the ports opened to foreign trade by Treaty, and are in themselves a history of China's successive defeats in war and diplomacy. Beginning with Canton, Amoy, Foochow, Ningpo and Shanghai opened by the Treaty of 1842, and ending with those Manchurian Treaty Ports whose long heralded opening at last appears imminent, they are an unbroken series of concessions to superior force. Trade has never been understood or appreciated by the mandarin mind. From the complacent memorialist—a great scholar and capable administrator—who hoped to bring the British to their knees by cutting off the export of rhubarb and tea, down to the present generation of officials, political economy is an unheard of science. The foreign trader has always been regarded as an unruly guest, and has frequently justified his reputation.

In the days before 1842, merchants made their own arrangements with the Customs direct, and though the Chinese Customs Authorities were supplied with voluminous prohibitions, rules and conditions to enforce in their dealings with the "red hair barbarians," trade was done fairly easily. Relations were unstable, varying with each voyage, each captain, and each official dealt with. The Customs authorities were not averse to foreign trade: with them the question was soon reduced to haggling over the bribe: but the local authorities, their superiors in the official hierarchy, were uncertain in their attitude. Some were willing to connive at trade but were frightened to be found out: others were determined to stamp it out as an abomination: all were deeply embarrassed by a situation forced on them by the barbarians who hated temporising and the diplomatic delays dear to the Chinese mind. In 1842 war with Great Britain broke out, and an attempt was made in the Treaty of Nanking to regularize the merchant position. The vexatious and humiliating position he had been placed in at Canton*, where, with the knowledge and almost the approval of the British Government, he had been treated as a pariah and condemned to live in a tiny area, allowed to deal only with a few merchants under conditions which made it impossible for him ever to ascertain the real market prices of the goods he dealt in, disappeared for ever. From that date the tide turned and thenceforth the merchant called the tune in dealing with Chinese officials.

Between the Treaty of 1842 and the spread of the Taiping Rebellion in 1853, no serious disputes on Customs matters seem to have arisen. The Treaties were imperfectly carried out, and numerous complaints lodged, but no *casus belli* arose. The change was brought about by events which had nothing to do with foreign trade. Other questions were rapidly leading to war between Great Britain and China, but the Customs were reformed by agencies within China.

The Origin of the Chinese Maritime Customs

The Taiping rebellion swept over Chekiang, and in September 1853 the native city of Shanghai fell into the hands of the rebels. The Imperial officials all fled, and the Custom House was abandoned. It was decided that in order that the Chinese Government should not be deprived of the revenue justly due, duties on cargo should be collected by the foreigners themselves. This was accordingly done. The first arrangement was that merchants should declare their goods to their Consuls, and deposit with them a bond for the duty on "a moderate 5 per cent. basis." The attitude of the merchants to the Customs was entirely honorable, but the scheme did not work very well, and on June 29, 1854, an agreement was come to between the Shanghai Taotai and the Consuls of the three powers, France, Great Britain, and the United States by which three foreign inspectors were appointed by the Taotai.

They were Captain Thomas Wade, afterwards British Minister at Peking, and the author of the extraordinary transliteration of Chinese sounds into English which has been forced upon generations of unhappy students; Mr. Carr for the United States, and a gentleman named Arthur Smith for France. For a year this arrangement endured with Captain Wade playing the chief part, and then he resigned and his place was taken by Mr. Horatio Nelson Lay. Horatio Nelson Lay is an interesting figure of the fifties and sixties. The son of George Tradescant Lay, who made the first botanical collection to reach Europe from China and afterwards became an agent of the British and Foreign Bible Society and a British Consul, and of Mary Nelson, niece of the Admiral, he seems to have been a man of great natural ability. But he had, like his namesake, a curiously impractical side to his character, which in his case prevented him from ever profiting by his real talents. His character was widely different from that of his father, who, when Consul at Foochow, allowed himself to be pushed out of the city and was forced to make his official dwelling on a mudbank. To propitiate the Chinese, G. T. Lay hoisted the British flag at half-mast, and generally made embarrassing precedents for his successors as well as enraging his subordinate, the future Sir Harry Parkes.

In 1858 H. N. Lay was still a member of the British Consular service: he was also in the employment of the Chinese Government as an Inspector of Customs at Shanghai, and he was acting against the Chinese as interpreter to Lord Elgin's mission. On June 9, in an interview with Kiying, who had been brought from his retirement to use his old experience in dealing with foreigners, Mr. Lay answered the old man's protestations of friendship by producing a copy of a memorial written by him in 1850 explaining to the Emperor that his friendly relations with the British were only to keep them in hand and "to deceive the barbarians and keep them at a distance." The incident was final. Kiying retired from his mission. Two days later, Mr. Lay forced the Chinese to sign and seal a letter by his resolution of not leaving them until it was done. In the further negotiations, Mr. Lay's duty was to carry matters with a high hand: and this too much accorded with

*See article on Early Traders of Old Canton in this issue.

his inclinations in the position in which he then was. These matters were made the grounds of complaints to the other plenipotentiaries, and were, of course, reported to Peking. When in 1863 events gave Peking the power to dismiss him from their service, these memories must have tempered their regrets at parting with him. It is painful to add that poor Kiying, then 72, was punished for his failure, which was in no way his fault, by a sentence of decapitation. His rank as an Imperial Clansman saved him from this manner of death, though not from death itself. Two officials of the Clan Court were directed to proceed to the "Empty House" and there "having desired Kiying to read this *our* holograph decree, to inform him that it is *our* will that he put an end to himself, that *our* extreme desire to be at once just and merciful be made manifest."

The result of this Treaty, in the making of which Mr. Lay had played so prominent a part as a stern enemy of the Chinese Government, was expressed in the tenth rule of trade. It is there laid down that a British subject shall be selected for the post of High Officer to administer a uniform system of Customs at the ports, and to supervise a service of lights, buoys, and beacons. Mr. Lay was selected and in May, 1859, became Inspector General. The choice was a sound one, for Mr. Lay is usually regarded as having been responsible for both the Rules of Trade and the Tariff of 1858. In June, 1861, he returned to England, and on his return to China quarrelled with the Chinese on matters which had nothing to do with the Customs and was dismissed in November, 1863. When he went on leave in 1861, Mr. Hart and Mr. FitzRoy were appointed to act in his absence, and on his dismissal Mr. Hart became Inspector General.

Robert Hart was born in Ireland in 1835. He came to China in 1854 as a student interpreter in the Superintendency of Trade at Hongkong, and when the British occupied Canton in 1859 they made him Inspector of Customs. From the time he came to China in 1854 he went on leave only thrice: in 1866, in 1877, and finally in 1908. The last time he never returned, dying in England in 1911. In 1885 he was appointed British Minister, but he held strong views as to the selection of his successor as Inspector General, and when he found that they were not likely to be accepted he resigned the appointment and returned to the Customs. There can be little doubt that he was wise. As I. G. he did invaluable work, and could not have been replaced, while Sir Harry Parkes, who became British Minister, was equally at home in that position. The Chinese Government bestowed many honours on him, including the title known as the "Junior Guardian of the Heir Apparent," and from Great Britain he received the honor of a Baronetcy, while other countries bestowed equally high decorations. His honors are forgotten: his fame as "the I. G." remains. He lived too long, and his experiences from 1900 until his death cannot have made him hopeful for the future of China or of the service which he had in large part created. The benefits he conferred on China by his great work of organization and administration are immense. The revenue is her only sure source of income, and increases steadily. The administration of the Maritime Customs should have served as an example in the task of raising the standard of official honesty, but sixty years is evidently too short a time for any effect to be seen. It has certainly created an impression of poignant regret that so much money should go untouched.

The benefits to foreign trade have been equally great. The old corruption and inefficiency have been replaced by a fixed tariff, proper examination of cargo, fixed tonnage dues, regular office procedure in a foreign language, with appeal to foreign officials and, in extreme cases, to a mixed board of arbitration. These benefits were immediately acknowledged by the honest trader, but for some years the less scrupulous sometimes sighed for the days when a single large payment cleared the entire cargo of a ship, no matter of what it was composed.

The Staff of the Foreign Customs

The Inspector General is the representative of the Chinese Government, who employs the remainder of the Service. His will is law and from his decisions there is no appeal. His staff is divided into three branches, the Revenue Department, the Marine Department, and the Works Department. The first is the only one dealing with Customs matters: the two latter exist owing to the peculiar conditions under which the first functions.

The Revenue Department employs about one thousand foreigners, including Japanese, and nearly five thousand Chinese.

The Marine Department consists of about one hundred foreigners and twelve hundred Chinese, and the Works Department of 14 foreigners and 15 Chinese.

The foreigners serving in the Revenue Department are divided into two classes, the Indoor and the Outdoor Staffs. The Indoor Staff may be said to be the administrative and book-keeping side, while the Outdoor Staff do the examination work. Commissioners, Deputy Commissioners, and Assistants make up the Foreign Indoor Staff, and various grades of Tidesurveyors, Appraisers, Examiners, and Tidewaiters the Foreign Outdoor Staff. This staff is recruited from all the nations having treaty relations with China, the representation being roughly equivalent to the trade interests involved. Some important countries with small trades have insisted on a somewhat larger representation than their trade requires.

The Indoor Staff is, for European nations, recruited either through the Customs office in London or by direct nomination, while the Outdoor Staff is taken on locally. It is impossible with so many nationalities that there should be any fixed standard of qualifications. The questions of promotion, and selection for commissionerships are dealt with solely by the Inspector General. He decides the staffing of the ports, an important matter to members of a Service operating over so many degrees of latitude, where the Northern ports are generally considered superior climatically to the Southern. Service in some of the Treaty ports which have proved trade failures, but which must be kept open, means exile from European society and the conveniences of life for a number of years.

The Germans were the first to bind the Inspector General's hands by insisting that only Germans should be appointed to Tsingtau. This has been eagerly adopted by the Japanese, who have insisted that only Japanese shall be stationed at Tsingtau, and this is practically so at Dairen. A serious incident is the steady aggressive demand for the appointment of a Japanese commissioner at Antung, which would be a severe blow to American and Western interests in Manchuria.

The Chinese staff of the Revenue Department is recruited by competitive examination and is liable to serve in any port in China. All these Chinese are required to speak English.

Little provision is made for retiring. The better paid indoor men receive an extra year's pay every seven years, which is called a Retiring Allowance, and is intended to be put aside as provision for that eventuality: the less well paid Outdoor Staff men only receive a year's pay every ten years, and the Chinese staff only get theirs every twelve years. Leave is granted to the Indoor Staff after the first six years of service for one year on full pay, or two years the second without pay, and after that every five years on the same terms, while the Outdoor Staff have to serve for 10 years before they are given a six months' leave. No passages are paid home, but half the return passage is paid for the man and his family.

The Maritime Customs Tariffs

There are two Tariffs in force in China. Exports are treated under the old tariff of 1858, which is still in force at all ports, and also serves as an import tariff at some stations in Yunnan. The Chinese Government can reduce, but not increase, these duties of their own will. The import tariff cannot be altered without the consent of all the Powers. This was originally fixed in 1842, revised in 1858, after the Boxer rising in 1901, and again in 1918. It should have been revised every ten years after 1902, but the Chinese in making their Treaty of Commerce and Navigation with Japan in 1896, consented to Article 26, which reads:

> "It is agreed that either of the High Contracting Parties may demand a revision of the tariffs and of the commercial articles of this Treaty at the end of ten years from the date of the exchange of the ratifications; but if no such demand be made on either side and no such revision be effected within six months after the end of the first ten years, then the Treaty and tariffs in their present form shall remain in force for ten years more, reckoning from the end of the preceding ten years, and so it shall be at the end of each successive period of ten years."

When the tariff was revised by the International Protocol of 1901 it was laid down that revision should take place every ten years from 1902. The Japanese have insisted on the terms of their older Treaty, and therefore revision for Japan would come in 1906, 1916, 1926, while for the other Powers it would come in 1912, 1922, 1932. The result is that China got no revision at all, the terms the Japanese demanded for letting revision take place at the same time as the other powers being too severe to be admissible. When the question of China's entry into the war became a practical one, tariff revision was one of the inducements offered. These terms China accepted, but the concession was much reduced in value by the decision that the values on which the new duties were to be based were to be those of the years 1912-1916. The result is, that China will not get a 5 per cent. tariff, or indeed a 4 per cent. The agreement of all the powers is necessary to any change in the import tariff or in the rules under which it is administered. This agreement China can seldom obtain, and has had only three revisions. That in 1858 was stated in Article 26 of the Treaty to be due because

> "Where the tariff fixed by Article 10 of the Treaty of Nanking and which was estimated so as to impose on imports and exports a duty at about the rate of five per cent. ad valorem, has been found by reason of the fall in the value of various articles of merchandize therein enumerated to impose a duty upon these considerably in excess of the rate originally assumed as above to be a fair rate, it is agreed that the said tariff shall be revised. . . . ."

The revision of 1901, 43 years after, was caused by the desire of the Powers to increase the security for the indemnity which China was to pay them, and in 1918 revision was offered as a concession on China joining the Allies. She cannot, therefore, get any revision, unless the Powers benefit more than she does, and the interests of Chinese trade and shipping are not considered. Such a thing as a protective tariff will not be allowed until China is strong enough not to have to ask leave to impose one.

The New Import Tariff

China's new tariff was given as a supplement to the January number of the FAR EASTERN REVIEW, and is reprinted in this issue. The most interesting points about it are the introduction of the principles of scientific classification, though in a timid and half-hearted way. Hitherto, for example grey cotton yarn of all counts has paid the same duty. Now different counts pay different duties. Cotton goods are still divided according to the names which British merchants gave to their goods in 1858. The reason for the continuance of this strange system is that now everybody in the trade knows what his goods are called for the assessment of duty, no matter what they really are, whereas were a scientific classification suddenly introduced, the trade would be dislocated until merchants found out by experience what their goods would pay in duties under the new schedule. The traditions of sixty years cannot be set aside in a day, and the Chinese Government will have to employ experts before they can submit a proposal for a scientific classification such as the French and American tariffs give. The values on which the Chinese have to collect duties are instructive. Shanghai residents will be interested to know that coal is worth Hk. Tls. 5.4 a ton. Sheeps' wool is worth Hk. Tls. 17 a picul. This tariff is to run until 2 years after the declaration of peace, when China will once more attempt to get 5 per cent.

Assessment of Ad Valorem Duties in Practice

The assessment of duty on articles which pay a fixed rate gives little trouble to merchants, but the assessment of *ad valorem* duties is more difficult, and is a constant source of dispute. From the merchant's point of view it is necessary for him to be able to estimate accurately what duties his goods will have to pay. Without this knowledge he is gravely hampered in making forward contracts. The Customs, on the other hand, must protect the Revenue interests committed to their charge. The question at issue is, on what value is the 5 per cent. to be charged? From the framing of early references to the subject it would seem that the landing (C. I. F.) value of the goods was intended. The practice since 1902 has been that invoices when genuine are accepted and it is laid down in the rules appended to the tariff that if contracts are produced they are to be considered to be 12 per cent. higher than the duty paying value, unless they are C. I. F. contracts, when no deduction is made. The Rule does not say how this 12 per cent. was arrived at, and it would be interesting to know. It is obvious that the percentage of difference between invoice values and contract values must vary with the nature of the goods and the character of the invoice. Goods imported in very large quantities do not have to make large profits for the trade to be practicable, while goods imported in small quantities, which need much expenditure in the way of advertising, etc., to place them on the market must make a larger initial gain to pay the same ultimate percentage of profit to the importer. Goods consigned from the manufacturer to a branch office are, of course, invoiced at a lower rate than goods passing from manufacturer to a merchant who takes the chance of profit or loss himself. A still more extreme case is that of a Government monopoly trading in another country. Here the profit need not be made in the country in which the goods are sold, for the expenses incurred in killing competition, though, of course, ultimately borne by the consumer in that country, will, for the years in which competition goes on, be borne by the consumers in the country in which the monopoly exists. Invoices are in this case non-existent for where there is no market there cannot be a market price.

The most constant source of difficulty is with machinery contracts. The usual contract for machinery includes the cost of preparing the plans and surveys. Estimates have to be made for the contractors by highly paid experts, and after the arrival of the machinery further expenditure is incurred during the erection of it by unskilled, semi-skilled, and skilled labor under the supervision of engineers. Some of the materials used in the erection of the plant have then to be purchased locally. These items represent a considerable portion of the contract price. It is urged that the Chinese do not like to pay much for the costs of erection, as they are not yet sufficiently educated to realise that good machinery is only spoilt if erected by unskilled engineers, and that some of these charges are transferred in the contract to the cost of the machinery. It is impossible to legislate for this, and the only way of finding the exact cost of the dutiable portions of the contract is to secure the production of the manufacturer's invoices. Merchants object to producing these unless they can be assured that they are dealt with in great secrecy.

Disputes also occur on the question of the production of contracts. The Customs have no Treaty right to call for contracts, but if they are sure that the goods are sold and they do not accept the invoices, they can place their own values on the goods and call on the merchants to disprove them. Merchants are generally not willing to pay on contract prices, as the twelve per cent. allowed for the difference between the contract and the invoice is not considered a sufficient margin, especially since the war has raised all miscellaneous charges so much. These are all questions of many years standing, which do not seem to get any nearer to settlement.

The American tariff is based on the *ad valorem* principle, though the adoption of a system of fixed rates has been recommended by a Committee appointed to consider the two systems. The question of values is simplified by the fact that the basis of valuation is the cost of the article in the country in which it is produced. The American Government keep staffs of experts in all the countries trading with the U. S. for the purpose of checking these values. Further, disputes are settled by Customs Courts in the final resort, and not as in China by a Board of Arbitration in which the Customs are automatically in a minority since two of the three members do not represent Chinese interests. This is perhaps an advantage for trade, since it means that red tape will not be too sympathetically treated. No fixed system will be evolved when neither the merchants nor the Customs have a preponderating influence in these questions, but the general average of the compromises arrived at will probably be fairer than where, as in all other countries, the Customs Authorities are to all intents and purposes omnipotent.

Imports into China

Exports and Imports must be considered separately, as the rules governing them are different. Taking Imports first, their treatment may be divided into four heads.

Goods Imported into a Treaty Port Only.—This is the simplest case, and the merchant has only to pay the import duty according

to the Revised Tariff. The application is made out by the importer and handed in at the Duty Memo. Desk of the Customs. When the Customs office routine is completed, the application goes to the wharf where the goods are, and after the particulars of the goods have been checked, and sometimes the goods examined, it returns to the Memo. Desk with a note of the Examining Staff's findings. If all is in order, and there is no trouble about the value in the case of an article not paying a fixed rate, the amount of the duty is noted on it and it is returned to the applicant, who pays the duty to the Customs bank, in return for which he receives a receipt enabling him to release the goods. This completes the transaction as far as the importer is concerned.

Goods re Exported from one Treaty Port to Another.—The procedure of original importation having been gone through the merchant decides that he will re-export the goods to another Treaty Port. He produces documents to show that these are the original goods which he imported and on which duty has been paid, and then receives an Exemption Certificate enabling him to re-export them without paying any export duty, and to re-import them at their new destination free. This privilege is naturally largely used as ocean going steamers call only at a few ports in China, and ports near Shanghai see few cases of original imports.

Re-Export Abroad.—If the merchant is unable to find a market for his goods, or for any other reason wishes to re-export them out of China, he can obtain drawback, provided the goods are in their original packing, entitling him to the refund of the duty which he paid when they were imported. This cancels the whole duty transaction. This privilege has the effect of making the whole of China into a free port.

Likin

Goods for the Interior: Likin; Tsoli; Loti; Transit Passes.—The merchants' troubles begin when he wishes to move his goods into the interior. He has paid Maritime Customs duty according to the Tariff, which might be expected to free him from further Customs taxation. But the Maritime Customs dues go direct to the Central Government, and the Provincial Authorities, who are on bad terms financially with Peking, wish to get something for themselves out of the goods which come into their part of the country. They have accordingly evolved a complicated system of taxation, the chief name in which is likin.

Likin, like the Maritime Customs, is a heritage of the Taiping rebellion, and it was originally a voluntary contribution of one-tenth of 1 per cent. of the value of the goods to defray the cost of the rebellion. That was fifty years ago, but likin has grown with the passage of years. Little of the money ever went to reconstruction work, and to-day Nanking is still suffering from the sieges it underwent. Likin has spread until every creek, every road, and every pass has its barrier. The charges are not heavy, but they are numerous, indefinite, and delaying. No one can say "I am going to move one picul of cotton yarn from (A) to (B). The likin will be so much."

It is not any fixed amount: it is what the merchant will stand. First there is the likin itself, a different rate at every station, for there is no likin tariff. Then there is the dispute as to fare. Then there is the fee for examination. Then the bribe for non-examination. Then there is the contribution to the repair of a neighboring temple. And so on to the end of the merchant's patience. The ordinary merchant would not, of course, trouble his head with how the bill was made up. He would immediately bargain with the likin people for a fixed sum to cover all his goods. These detailed charges are only to give an air of verisimilitude to an otherwise bald and unconvincing statement.

Likin is not of much direct benefit to the Government. It is usually farmed out and the farmer makes as much as he can. If it is not, it makes little difference whether the money is taken by the farmer or by the Government's own servant, for the latter simply omits or reduces the entries in his books to cover what he pockets. Then the merchant connives at a fraud? Of course, he must. He can never expose it, for even if there were an honest Governor, and he could get access to him without the matter being suppressed or delayed on the way, the man who would replace the man dismissed would be t'other instead of which.

So grave a hindrance to trade has been attacked by the Treaty Powers. But the battle has raged since 1858 without any conclusion. Article 28 of the British Treaty of 1858 reads:

> "Whereas it was agreed in Article 10 of the Treaty of Nanking that British imports, having paid the Tariff duties, should be conveyed into the interior free of all further charges, except a Transit Duty (The treaty of Nanking did not state the amount of this Transit Duty) the amount whereof was not to exceed a certain percentage on Tariff value; and whereas no accurate information having been furnished of the amount of such duty British merchants have constantly complained that charges are suddenly and arbitrarily imposed by the Provincial Authorities, as Transit Dues upon produce upon its way to the foreign market, and on Imports on their way to the Interior, to the detriment of trade; it is agreed that within four months from the signing of this Treaty at all ports now open to British trade, and within a similar period at all ports that may hereafter be opened, the authority appointed to superintend the collection of duties shall be obliged, upon the application of the Consul, to declare the amount of duties leviable on produce between the place of production and the port of shipment, and upon Imports between the Consular Port in question and the inland market named by the consul; and a notification thereof shall be published in English and Chinese for general information. But it shall be at the option of any British subject desiring to convey produce purchased inland to a port, or to convey imports from a port to an inland market, to clear his goods of all Transit Duties by payment of a single charge. The amount of this charge shall be leviable on exports at the first barrier they may have to pass, or on imports at the port at which they are landed; and on payment thereof a certificate shall be issued which shall exempt the goods from all further inland charges whatsoever. It is further agreed that the amount of this charge shall be calculated as nearly as possible at the rate of 2½ per cent. *ad valorem*, and that it shall be fixed for each article at the conference to be held at Shanghai for the revision of the Tariff. It is distinctly understood that the payment of Transit Dues, by commutation or otherwise, shall in no way affect the Tariff Duties on Imports or Exports, which shall continue to be levied separately and in full."

This is the clause which has been discussed ever since it came into force. The Chinese contend that its effect is to free goods from taxation while they are in transit, and while they are in transit only. To avoid the loss of revenue to them, the Provincial Authorities devised a series of taxes to be operative directly the goods ceased to be in transit: landing charges (lo-ti shui) consumption charges, and so forth. The merchant therefore pays 2½ per cent. extra duty and gets nothing in return in some Provinces. The Foreign contention that the payment of Transit Dues frees the goods from all further taxation whatsoever is clearly the spirit of the clause, and was indisputably the intention of its framers. No one would willingly pay 2½ per cent. extra duty when he was certain that "new Presbyter is but old Priest writ large," and that the likin duties would await him under a new name at his journey's end instead of on the way.

Complaints are lodged with the Central Government, which usually lends a sympathetic ear, for it wishes to stand well with the Foreign Powers, and has little monetary interest in the question. But the Central Government cannot remedy the matter completely, because if Likin is abolished something has to take its place, and it has not enough money for itself, without thinking of other people. So redress is seldom complete, and never will be until likin is abolished. This in turn will never be until the Central Government can give genuine assurances that no further taxation means no further taxation, and nothing else, and can, from the increased revenue granted make good the loss incurred by the Provincial Authorities. The Provincial Authorities will probably require some guarantee that this revenue is certain to reach them, and cannot under any circumstances be devoted to other uses.

The Transit Pass is of course a great deal better than nothing. The main difficulties are, that in order to see that the goods being conveyed are those covered by the pass the authorities at the various barriers must have the right of examination. This is just, as did they not, the dishonest merchant would be able to profit by it. But the power of examination gives them the chance of making additional squeezes, for they can always demand a pourboire for not examining: threatening to examine if it is refused, and so causing a delay of three or four days at each of the barriers to be passed. These difficulties will only cease with the total abolition of the barriers. The merchants would almost certainly be willing to make a large concession as to the amount of extra duty they would pay if they could be assured that they would certainly be free of extra duty. The Chinese Government would profit largely by the increased amount of revenue reaching them. The decrease in the cost of collection would benefit all who shared in the turnover. The

only sufferers would be the large number of likin officials, and their determined opposition, backed by all the influence they can bring to bear, will certainly have to be encountered

If the merchant elects to move his goods without a Transit Pass, he must make his own arrangements with the Authorities This is usually done by large Chinese firms on the basis of a fixed monthly payment, or fixed sum for each movement of goods The Government is doubly defrauded by this system, since the merchant pays on less goods than he moves, and the official reports less duty than the merchant paid. Thus a man moving a thousand piculs of cotton yarn pays on 750, and the Likin official enters 500.

Transit Passes for Chinese Goods for Export.—It might be expected that the Chinese Government would by now have realised the importance of fostering exports, but this is not so. All is fish that comes to the Likin official's net. Exports are of course largely brought down from the interior by Chinese firms, though the increasing number of foreigners who can speak Chinese makes it more common every year for foreign firms to buy on the spot. Experience has shown this practice to be profitable. If the merchant wishes to avoid likin extortions and delays, he can take out a Transit Pass. He has to apply to his Consul stating where he is going and what he wants to buy, and to make a deposit covering the duty payable on the goods The Consul then requests the Chinese Superintendent of Customs to issue an Outward Transit Pass which is duly done. The difficulty lies in the application of the rules. They are distasteful to the Authorities who see the money they would receive go to the Central Government, and certain abuses have crept in There is no penalty for bringing down goods to a Treaty Port and then failing to export them. This cannot be remedied nor can a uniform system be established without the consent of the Powers. Each port has its local practice differing considerably. These differences are due to the fact that the Rules were put into force slowly at different ports and that Merchants and Consuls agreed to conditions which time has shown to be inequitable.

A proper Diplomatic Commission is required to reform the whole Transit Pass procedure, on which there should be representation of the merchants engaged in the trade. All ambiguities of expression must be avoided, and the most important work of the Commission would be to establish a set of rules to be put into practice at all ports in China. These should be provisional for one year, and the Commission should then re-assemble to decide what alterations practice had shown to be necessary.

If the merchant elects to do without a Transit Pass, he must make his own arrangements, as in the other cases we have mentioned.

Competition Between Likin and Transit Passes.—It sometimes happens that Likin officials will compete with the Transit Pass system, by offering a rate which is just cheaper than the cost of the Pass, and of course arranging to the merchant's satisfaction that there will be no delays, disputes, or attempts to avoid the bargain This can only be done where the goods have not far to go, or they would pass other barriers than those under the control of the man with whom the original bargain was made.

Prohibited Goods

The present tariff prohibits the importation of certain goods: these are mainly munitions of war, salt, opium and cocaine and their derivatives. A full list of them is exhibited at the Custom House. Trade in munitions of war can be carried on by special permission of the Chinese Government. The regulations affecting this trade are somewhat complicated, as is the procedure.

Free List

Before the revision of 1902, the free list was a generous one and caused a heavy loss to the Chinese Government. It included preserved meats and vegetables, cheese, butter, confectionery foreign clothing, jewellery, plated ware, perfumery, soap of all kinds, charcoal, firewood, candles (foreign), tobacco (foreign), cigars (foreign), wine, beer, spirits, household stores, ships' stores, personal baggage, stationery, carpeting, druggeting, cutlery, foreign medicines, and glass and rystal ware. When the 1858 Tariff was framed there was no Chinese demand for any of these articles, but as time passed the demand among the Chinese created a brisk trade which all passed free. At present, the free list is restricted to gold and silver bullion and coins, books, periodicals, maps, and plans, and cereals.

Tonnage Dues

Rule 10 of the Rules of Trade of 1858 provide that the maintenance of lights, buoys, and beacons shall be provided for out of Tonnage Dues, and the tonnage dues themselves are fixed in Articles 29-31 of the British Treaty. These fix the rate at four mace a ton for vessels of over 150 tons burden, and make the necessary exceptions in favor of vessels departing without breaking bulk. They are not payable if the vessel makes the port in distress, provided that she does not discharge cargo Seven-tenths of the Tonnage Dues are stated by Morse to be applied to the service of the lights. When tonnage dues were fixed, it was agreed that a vessel should not pay twice within a period of four months. The intention was that she should not pay twice on the same voyage, the voyage of those days being to Europe round the Cape, except for such cargo as was landed and transhipped across the Isthmus of Suez. The record clipper trip in 1858 stood at 98 days from Foochow to London, and 115 days from Shanghai to London. Times have changed, and steam, the Suez Canal, and the entry of other and nearer nations into trade have made these provisions obsolete.

The coasters and Japanese trade benefit largely, of course, but the tendency of the rule is to drive ocean-going shipping from Chinese ports, since they have to pay tonnage dues on their full tonnage, no matter how little cargo they discharge If the cargo is transhipped in Hongkong or Japan, no tonnage dues are paid by the large vessel and the small one can make many voyages in the period of four months. This is more a matter for the Chinese Government than the foreign trader, but if Shanghai wishes to retain its position as a port some system with a fairer incidence must be found. An obvious one is to charge tonnage dues in the form of a small surtax on the import duties paid by the cargo: this would ensure that ships paid in exact proportion to the cargo they brought. Objections would of course come from those benefiting by the present rule, who would complain that their smaller vessels gave less trouble than the larger ones. But the smaller vessels make more trips and so give more troubles, and as the lights and beacons are erected to further trade in general, and not any one form of the of the carrying trade it would be just to charge the duties on the cargo, that is the trade, itself.

Coast Trade Duty.—Coast trade duty is charged on goods proceeding in foreign bottoms, that is under the Maritime Customs, from one port to another. These goods are Chinese exports from one port, and imports at another: but they have to pay two duties just the same, the concession being that they pay a full export duty and only a half import duty, which is known as a coast trade duty.

Bonded Warehouse.—Bonded godowns have been established at most of the ports of importance in China. The system is that the goods are landed into the godown, where they may remain without paying any duty until the merchant wishes to remove them. The Customs and the merchant have keys to the godowns, which one cannot open without the other, and so the goods cannot be removed or tampered with without the knowledge of the Customs. For these privileges, special fees have to be paid, as well as for the attendance of Customs officers when goods are to be examined for removal.

Land Frontier Trade

Under the provisions of the Russian Treaty of 1862, goods imported across the land frontier had one-third of their import duty remitted. This privilege was accorded in view of the great expenses which such goods incurred in transport. Its effects have been far reaching, for Japan has insisted that as she has land frontier communication with China across the Korean frontier at Antung, her goods shall have a similar reduction. This has, of course, a detrimental effect on the trade of other nations, since they must compete with Japan with a duty discrimination against them. The Chinese Government also lose this revenue.

A somewhat similar system exists on the Yunnan frontier, where the old tariff of 1858 is still in force, but with a reduction of 3/10ths. In this case, the policy of severe restrictions imposed by the bureaucratic French have minimised the Trade, which

otherwise would be under exceptionally favorable conditions. It will be interesting to see whether the new revised tariff will be enforced on all frontiers, and, if so, whether these reductions will continue in force.

Native Customs

Besides the Maritime Customs, China has a complete system of Customs of her own, which are usually called by the trader the Native Customs. These native customs are the relicts of the old Chinese system which was superseded, for cargo borne in foreign bottoms, by the Maritime Customs. They also deal with the junk-borne cargo from unopened port to unopened port. By the Peace Protocol of 1901, those within a 50-*li* radius of the Treaty Ports were placed under the control of the Commissioner of Customs. Much difficulty was experienced in enforcing this stipulation, as the Chinese policy of patient unvarying obstruction came into its own once the armed forces of the Allied Powers were withdrawn. No one tariff exists for the Native Customs. Each group has a different one, and in many cases each office in each group has a tariff of its own. These are usually based on tariffs of the Ming dynasty, and deal with a trade that has long since ceased to be troubled with taxes. As in all cases of Chinese rules or regulations, the rules are not so objectionable as the exceptions, which are the majority. Every compradore can supply instances of the curious extra charges which these stations levy, and the exceptions made in favor of certain classes of goods, or of goods borne in junks belonging to certain guilds, etc. The Maritime Customs have tabulated the tariffs of those Native Customs under their control, and increased the efficiency of the working. All traffic in native-owned junks must pass through the Native Customs, and the payment of native Customs charges does not free them from further taxation: it is the first step in the ladder. They have then to pay all the Likin and other charges in force on the route over which they have to pass. The Native Customs are not as vexatious as Likin. But they are in general ill-administered, and as in all things under purely Chinese management, there are many complaints of squeezes and delays. Their whole policy is now out of date. Before there were other Customs to deal with goods coming from other countries, it was right that China should charge goods coming for sale on her marts. But now that there is a properly equipped service dealing with foreign imports and experts, it is obviously against China's own interests to tax her interport trade. Their abolition, though impractical to-day, would be a benefit to the community. No estimate can be made of the trade passing through the Native Customs, or the revenue derived from them. No statistics are published, and as it has already been said, there is no one tariff or set of rules. The figures must be large, but there is no way of arriving at any estimate of the number of junks engaged in the trade, the value or kind of the goods they carry, or the amount of duties they pay. Their working is entirely separate from that of the Maritime Customs.

Hongkong

Hongkong, ceded to the British in 1842, is a British colony, and though situated in China, is treated exactly as though it were a thousand miles away. It is, of course, a great entrepot: and most of the goods coming from Hongkong are actually Chinese goods in transit from one part of China to another. The passage through Hongkong makes them foreign, and brings them under the Treaties regulating the taxation of foreign goods. This has made it worth the Chinese merchant's while to ship his goods to Hongkong, there to be re-shipped back to China, without any idea of sale in Hongkong under any circumstances. His object is to make his Chinese goods foreign, and so gain the preferential treatment accorded the latter. This does not mean that foreign goods escape payment of duties. They do not: but they escape, by being coverable by Transit Passes, some of the thousand and one delays and exactions which native goods are submitted to by their own officials. A more striking condemnation of the failure of China's fiscal policy cannot be stated than this fact: that it is worth while for a Chinese to ship his goods all the way to Hongkong and back simply to make them foreign.

The frontier between Hongkong and China is guarded by the Chinese Maritime Customs, who administer the special tariff of the local native Customs. This applies also to the Kowloon-Canton Railway, which does not get the benefit of any of the reductions received by the Russian, French, and Japanese railways. This tariff is not a heavy one. By the Peking Convention of 1869, which was refused ratification by Great Britain, China would have had the right to make all Chinese goods shipped from Hongkong pay as Chinese goods: that is to say that they would not have been covered by Transit Passes, and would have had to have paid Likin and all other charges.

Chinese Factory Products

A limited measure of preferential treatment has been introduced in dealing with Chinese Factory Products. A Factory can, by application to the proper Chinese authorities, receive the privilege of paying one 5 per cent. *ad valorem* duty on its products, which are then freed from all other duties whatsoever. The number of factories in China increases every year, and this privilege is largely used. It is undoubtedly a wise step, and fosters a growing and all important part of China's industrial life. This privilege can be obtained by any factory in China, whether owned by Chinese or foreigners.



TWO WINGS OF THE MARITIME CUSTOMS BUILDING AT SHANGHAI, FRONTING ON THE BUND, WITH CLOCK TOWER. AT EXTREME LEFT IS HONGKONG AND SHANGHAI BANKING CORPORATION BUILDING

Duties Collected by Maritime Customs

The duties collected by the Maritime Customs are first used to meet the obligations for which the Maritime Customs is the security. When these obligations have been met in full, and they are always met in full, the Chinese Government asks that the balance may be handed over to them. The Foreign Powers give their consent, and then, for the first time, the money is in the hands of the Chinese officials to deal with.



STATUE IN SHANGHAI OF SIR ROBERT HART

China's New Tariff

The following is the Draft of the Chinese Tariff as Revised by the Tariff Revision Commission—which completed its labours on December 20—and sent to the Ministers in Peking for submission to their home Governments for ratification :—

COTTON AND COTTON GOODS.

	Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
	Cotton Piece Goods, Grey:—			
	Grey Shirtings and Sheetings, not over 40-in. by 41 yards :			
	(*a*) Weight 7-lb. and under	piece	1.817	0.091
	(*b*) Weight over 7-lb. and not over 9-lb.	,,	2.681	0.13
	(*c*) Weight over 9-lb. and not over 11-lb.	,,	3.530	0.18
	Grey Shirtings and Sheetings, not over 40-in. by 41 yards and with more than 110 threads per square inch :			
	(*a*) Weight over 11-lb. and not over 12½-lb.	piece	3.933	0.20
	(*b*) Weight over 12½-lb. and not over 15½-lb.	,,	4.668	0.23
	(*c*) Weight over 15½-lb.	,,	5.400	0.27
	Grey Shirtings and Sheetings, not over 40-in. by 41 yards and with 110 threads or less per square inch :			
	(*a*) Weight over 11-lb. and not over 15½-lb.	piece	3.293	0.16
	(*b*) Weight over 15½-lb.	,,	4.000	0.20
	Drills and Jeans, Grey, not over 31-in. by 31 yards	,,	2.950	0.15
	Drills and Jeans, Grey, not over 31-in. by 41 yards :			
	(*a*) Weight 12½-lb. and under ...	piece	3.900	0.20
	(*b*) Weight over 12½-lb.	,,	3.215	0.16
	T-Cloths, Grey, not over 34-in. by 25 yds. :			
	(*a*) Weight 7-lb. and under...	piece	1.722	0.086
	(*b*) Weight over 7-lb.	,,	2.312	0.12
	T-Cloths, Grey, over 34-in. but not over 37-in. by 25 yards	,,	2.950	0.15
	Imitation Native Cotton Cloth (including Machine-made), Grey, not over 24-in. wide and with not more than 110 threads per square inch	picul	32.400	1.60
	Cotton Flannel or Flannelette of Plain or Twill Weave, Grey :			
	(*a*) Not over 32-in. by 31 yards	piece	3.484	0.17
	(*b*) Over 32-in. but not over 40-in. by 31 yards	,,	4.600	0.24
	Cotton Piece Goods, White or Dyed— (irrespective of finish) :—			
	Plain White Shirtings and Sheetings, not over 37-in. by 42 yards	piece	4.183	0.21
	White Irishes, not over 37-in. by 42 yards	,,	5.096	0.25
	Drill and Jeans, White, not over 31-in. by 32 yards	,,	3.296	0.16
	Drills and Jeans, White, not over 31-in. by 42 yards	,,	4.348	0.22
	T-Cloths, White, and Mexicans, not over 32-in. by 41 yards...	,,	3.614	0.18
	Dimities, Piqués, Vestings, Quiltings, and Bedford Cords, White, not over 30-in. by 30 yards	,,	4.749	0.24
	Cambrics, Lawns, and Muslins, White, Plain, not over 46-in. by 12 yards ...	..	0.810	0.041
	Cambrics, Lawns, and Muslins, White, Figured, not over 46-in. by 12 yards...	value	5 per cent.	—
	Cambrics, Lawns, and Muslins, Dyed, Figured, not over 46-in. by 12 yards...	value	5 per cent.	—
	Cambrics, Lawns, and Muslins, Dyed, Plain or Figured, not over 46-in. by 12 yards	,,	5 per cent.	—
	White or Dyed Plain or Figured Muslins, Lawns, Cambrics, Limbrics, Pongees, Brocades, and Striped, Spotted, Corded, and Figured Shirtings :			
	(*a*) Not over 30-in. by 31 yards ...	piece	4.443	0.22
	(*b*) Over 30-in. but not over 37-in. by 42 yards	,,	5.000	0.25
	Lenos, White or Dyed, not over 31-in. by 30 yards	,,	2.161	0.11
	Leno Brocades, White or Dyed	value	5 per cent.	—
	Dyed Shirtings and Sheetings, Plain :			
	(*a*) Not over 30-in. by 33 yards	piece	2.7555	0.14
	(*b*) Not over 30-in. and over 33 yards but not over 43 yards	,,	3.5905	0.18
	(*c*) Not over 36-in. by 21 yards	,,	2.1048	0.11
	(*d*) Not over 36-in. and over 21 yards but not over 33 yards...	,,	3.30759	0.17
	(*e*) Not over 36-in. and over 33 yards but not over 43 yards...	,,	4.30989	0.22
	Dyed Drills and Jeans, Plain :			
	(*a*) Not over 31-in. by 33 yards	,,	3.600	0.18
	(*b*) Not over 31-in. and over 33 yards but not over 43 yards...	piece	4.676	0.23
	Dyed T-Cloths, Embossed Cantons, Alpacianos, Real and Imitation Turkey Reds, not over 32-in. by 32 yards :			
	(*a*) Weight 3¼-lb. and under	piece	1.389	0.034
	(*b*) Weight over 3¼-lb. but not over 5¼-lb.	,,	2.400	0.12
	(*c*) Weight over 5¼-lb.	,,	3.320	0.17
25	Mercerised Crimps, White, Dyed, or Printed, Plain or Figured, not over 32-in. by 32 yards	,,	5.478	0.27
	Oatmeal Crapes, White or Dyed, Plain or Figured, not over 33-in. by 33 yards	,,	5.265	0.26
27	Cotton Crape (excluding Oatmeal Crapes), Grey, Bleached, Dyed, Printed, or Dyed in the Yarn :			
	(*a*) Not over 15-in. wide	value	5 per cent.	—
	(*b*) Over 15-in. but not over 30-in. wide	yard	0.105	0.0053
	Lastings, Italians, Satteens, Ribs, Cords, Moreens, Beatrice Twills, Tientsin Twills, Satteen Drills, Satteen Stripes, Repps, and Imitation (Weft-faced) Venetians, White or Dyed, Plain or Figured, not over 33-in. by 33 yards	piece	4.540	0.23
	Poplins and Venetians, White or Dyed, Plain, not over 33-in. by 33 yards ...	,,	8.0945	0.40
	Poplins and Venetians, White or Dyed, Figured, not over 33-in. by 33 yards	,,	10.000	0.50
31	Cotton Flannel or Flannelette of Plain or Twill Weave :			
	(1) White, Dyed, or Printed, or Dyed in the Yarn, exclusive of Duplex or Reversible Prints :			
	(*a*) Not over 25-in. by 15 yards ...	piece	1.400	0.07
	(*b*) Over 25-in. but not over 30-in. by 15 yards	,,	1.700	0.085
	(*c*) Over 25-in. but not over 30-in. by 31 yards	,,	3.600	0.18
	(*d*) Over 30-in. but not over 36-in. by 15 yards	,,	2.000	0.10
	(*e*) Over 30-in. but not over 36-in. by 31 yards	,,	4.300	0.22
	(2) Duplex or Reversible Prints	value	5 per cent.	—
	Dyed Cotton Spanish Stripes :			
	(*a*) Not over 32-in. by 20 yards	piece	2.241	0.11
	(*b*) Over 32-in. but not over 64-in. by 20 yards	,,	4.482	0.22
	Dyed Cotton Velvets and Velveteens, Plain, not over 26-in. wide	yard	0.2884	0.014
34	Cotton Velvets, and Velveteens, Printed, Figured, or Embossed, Velvet and Velveteen Cords, Corduroys, Fustians, Moleskins, and Plushes	value	5 per cent.	—
35	Canvas, Cotton (including Cotton Duck), for Sails, etc.	yard	0.300	0.015
36	Stockinet or Knitted Tissue :			
	(*a*) Raised	picul	44.000	2.20
	(*b*) Not Raised	value	5 per cent.	—
	Cotton Piece Goods, Printed:—			
37	Printed Cambrics, Printed Lawns, Printed Muslins, Printed Shirtings, Printed Sheetings, Printed T-Cloths (including those known as Blue and White Printed T-Cloths), Printed Drills, Printed Jeans, Printed Diagonal Twills, Twill Cretonnes, Printed Silesias, Printed Repps (excluding Repp Cretonnes) :			
	(*a*) Not over 20-in. wide	value	5 per cent.	—
	(*b*) Over 20-in. but not over 46-in. by 12 yards	piece	1.020	0.051
	(*c*) Over 20-in but not over 32-in. by 30 yards	,,	2.302	0.12
	(*d*) Over 32-in. but not over 42-in. by 30 yards	,,	3,094	0.15
	Printed Mercerised Crimps. See No. 25.			
	Printed Oatmeal Crapes and Oatmeal Crape Cretonnes, not over 32-in. by 30 yards	piece	2.705	0.14

	Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
	Printed Cotton Crape. See No. 27.			
	Printed Turkey Reds, Real and Imitation, not over 31-in. by 25 yards	piece	2.063	0.10
	Printed Lenos, not over 31-in. by 30 yards	,,	2.350	0.12
	Printed Satteens and Satinets, Printed Brocades (including Printed Fancy Woven Stripes or Checks), Printed Italians, Printed Damasks, Printed Venetians, Printed Lastings, Printed Beatrice Twills, Printed Cords, Printed Poplins, Printed Moreens, not over 32-in. by 30 yards	,,	5.000	0.25
	Printed Flannelette. See No. 31.			
42	Duplex or Reversible Prints of Shirting Weave and one colour only, not over 32-in. by 30 yards	piece	3.000	0.15
	Printed Velvets and Velveteens. See No. 34.			
	Printed Domestic Cretonnes, Printed Satteen Cretonnes, Printed Repp Cretonnes, Printed Embossed Figures, Printed Art Muslins and Casement Cloth, Printed Cotton Coatings, Trouserings, and Gabardines, and all other Duplex or Reversible Prints except those enumerated in Classes 37 and 42	value	5 per cent.	—
	Printed Blankets. See No. 45.			
	Printed Hankerchiefs. See No. 68.			

The term "Printed" in this Tariff includes Pigment Style, Direct Printing Style, Steam Style, Discharge Style, Madder or Dyed Style, Resist Style, Resist Pad Style, Metal Style, and so forth, irrespective of finish.

The term "Duplex or Reversible Print" in this Tariff includes all Printed Cottons having (*a*) a different pattern printed on each side of the cloth: (*b*) the same design on both sides of the cloth, whether printed with one or more rollers.

	Cotton Piece Goods, Yarn-dyed:—			
	Cotton Crape. See No. 27.			
	Cotton Flannel, or Flannelette. See No. 31.			
	Stockinet. See No. 36.			
	Not otherwise enumerated	value	5 per cent.	—
	Cotton Piece Goods, not otherwise enumerated	,,	,,	—
	Cotton, Raw; Cotton Thread, Cotton Yarn, and Goods made of Cotton:—			
	Ankle Bands, Plain or Decorated	picul	80.000	4.00
	Bags, New. See No. 529	,,	40.000	2.00
45	Blankets, Plain, Printed, or Jacquard (including those with a taped or whipped edge of Silk or other material), and Blanket Cloth	picul	40.000	2.00
	Canvas. See No. 35.			
	Crape. See No. 27.			
	Counterpanes, Honeycomb or Alhambra:			
	(*a*) Not over 2½ yards long	,,	45.000	2.25
	(*b*) Over 2½ yards long	value	5 per cent.	—
	Embroidered Edging or Insertion, Machine-made	,,	5 per cent.	—
	Flannelette. See No. 31.			
48	Handkerchiefs, neither Embroidered nor Initialled:			
	(1) White, Dyed, or Printed, Hemmed (but not with a drawn-thread hem):			
	(*a*) Not over 13-in. square	dozen	0.220	0.011
	(*b*) Over 13-in. square but not over 18-in. square	,,	0.360	0.018
	(*c*) Over 18-in. square but not over 30-in. square	,,	0.530	0.027
	(2) White, Dyed, or Printed, with drawn-thread hem:			
	(*a*) Not over 13-in. square	dozen	0.360	0.018
	(*b*) Over 13-in. square but not over 18-in. square	,,	0.750	0.033
	(*c*) Over 18-in. square but not over 30-in. square	,,	0.920	0.046
	(3) Printed Handkerchiefs, Unhemmed:			
	(*a*) Not over 18-in. square	dozen	0.190	0.01
	(*b*) Over 18-in. square but not over 25-in. square	,,	0.640	0.032
	(*c*) Over 25-in. square but not over 29-in. square	,,	0.800	0.04
	(*d*) Over 29-in. square but not over 34-in. square	,,	1.030	0.052

	Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
	Knitted Clothing, Raised (including that stitched with Silk Thread and with facings of Silk or other material) ...	picul	74.000	3.70
	Raw Cotton	,,	16.000	0.80
	Singlets or Drawers, not Raised (including those stitched with Silk Thread and with facings of Silk or other material)	dozen	2.800	0.14
	Socks and Stockings:			
	(*a*) Not Raised on either side:			
	(1) Made of Ungassed or Unmercerised Thread	picul	70.000	3.50
	(2) Made of Gassed or Mercerised Thread or stitched or embroidered with Silk	,,	150.000	7.50
	(*b*) Raised	value	5 per cent.	—
	(*c*) Others	value	5 per cent.	—
	Stockinet. See No. 36.			
	Towels:			
	(*a*) Turkish	picul	50.000	2.50
	(*b*) Honeycomb or Huckaback	,,	44.000	2.20
	Thread, Dyed or Undyed (irrespective of finish):—			
	(1) Sewing Cotton:			
	(*a*) In balls or skeins:			
	3-cord	picul	100.000	5.00
	6-cord	,,	190.00	9.50
	(*b*) On spools or cops:			
	2-cord, 50 yards or less	gross	0.586	0.029
	3-cord, 50 yards or less	,,	0.785	0.039
	6-cord, 50 yards or less	,,	1.458	0.073
	Other lengths in proportion.			
	(2) Crochet or Embroidery Cotton, in skeins or balls	picul	82.449	4.10
	Waste Cotton	,,	9.600	0.48
	Yarn:—			
	(1) Grey (irrespective of fold):			
	(*a*) Counts up to and including 17 ...	picul	25.500	1.28
	(*b*) Counts above 17 and up to and including 23	,,	27.663	1.38
	(*c*) Counts above 23 and up to and including 35	,,	33.000	1.90
	(*d*) Counts above 35 and up to and including 45	,,	43.600	2.18
	(*e*) Counts above 45	value	5 per cent.	—
	(2) Dyed, Bleached, Gassed, Mercerised, etc.	,,	5 per cent.	—

WOOL, SILK, LINEN AND HEMP GOODS.

	Flax, Hemp and Jute Goods:—			
57	Gunny Bags, New	picul	8.480	0.42
58	Gunny Bags, Old	value	5 per cent.	—
	Hemp	picul	14.000	0.70
60	Hemp or Hessian Bags, New	,,	18.900	0.95
61	Hemp or Hessian Bags, Old	value	5 per cent.	—
	Hessian Cloth	picul	18.000	0.90
	Canvas of Hemp and Jute for Sails, etc.	yard	0.38165	0.019
	Canvas Linen (elastic), for Tailoring ...	value	5 per cent.	
	Tarpaulin of Hemp or Jute...	yard	0.229	0.011
	Silk Goods and Silk Mixtures:—			
	Silk Piece Goods (all Silk), Plain, Figured, or Brocaded	value	5 per cent.	—
	Silk Plushes and Silk Velvets, Pure ...	catty	10.934	0.55
	Silk Seal, with Cotton back...	,,	2.9418	0.15
	Silk Socks and Stockings, Knitted (including those made of Artificial Silk)*	,,	7.000	0.35
	Silk Mixture Plushes and Velvets (i.e., made of Silk mixed with other fibrous material, with Cotton back) ..	,,	2.6537	0.13
	Silk and Cotton Satins, White or Dyed in the Piece*:			
	(*a*) Plain	catty	2.533	0.13
	(*b*) Figured	,,	3.233	0.15
	Silk and Cotton Satins, Dyed in the Yarn*	,,	4.000	0.20
	Silk and Cotton Mixtures not otherwise enumerated	value	5 per cent.	—
	Silk Ribbons, all Silk and Mixtures... ...	value	5 per cent.	—
	Wool and Cotton Unions:—			
	Union Shirtings, not over 33-in. wide ...	yard	0.4853	0.021
	Cloth made of remanufactured Wool and Cotton, such as Meltons, Vicunas, Beavers, Army Cloths, Union Cloths, Leather Cloths, Presidents (including Cloth containing a small quantity of new Wool for facing purposes), not over 56-in. wide	,,	0.800	0.04

* The French Delegation stated that it could not agree to the duty treatment proposed for these goods until it had referred the question to its Government.

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
Italian Cloth, Plain or Figured, Alpacas, Lustres, Orleans, and Sicilians ...	value	5 per cent.	—
Wool and Woollen Goods:—			
Wool, Sheep's	picul	17.000	0.85
Blankets and Rugs	pound	0.560	0.028
Bunting, not over 24-in. by 40 yards ...	piece	6.560	0.33
Camlets, not over 31-in. by 62 yards ...	,,	15.630	0.78
Flannel, not over 33-in. wide	yard	0.480	0.024
Lastings, Plain, Figured, or Crêped, not over 31-in. by 32 yards	piece	14.620	0.73
Llama Braid	picul	150.000	7.50
Long Ells, not over 31-in. by 25 yards ..	piece	6.657	0.33
Russian, Broad, Superfine, Medium, and Habit Cloth, not over 76-in. wide ..	yard	1.520	0.076
Spanish Stripes, not over 64-in. wide ...	,,	0.636	0.032
All Woollen and Worsted Yarn and Cord, including Berlin Wool	picul	120.000	6.00
METALS.			
Aluminium	value	5 per cent.	—
Aluminium Sheets	value	5 per cent.	—
Antifriction Metal	value	5 per cent.	—
Antimony Regulus and Refined	picul	14.000	0.70
Antimony Ore	value	5 per cent.	—
Brass and Yellow Metal :—			
Bars and Rods	picul	30.183	1.50
Bolts, Nuts, Rivets, Washers, and Accessories	value	5 per cent.	—
Ingots	picul	30.183	1.50
Nails	,,	36.765	1.80
Old (fit only for remanufacture)	value	5 per cent.	—
Screws	value	5 per cent.	—
Sheets and Plates	picul	30.183	1.50
Tubes	,,	47.809	2.40
Wire	picul	30-183	1.50
Copper :—			
Bars and Rods	picul	33.950	1.70
Bolts, Nuts, Rivets, and Washers .. .	value	5 per cent.	—
Ingots and Slabs	picul	28.000	1.40
Nails	picul	47.385	2.40
Old (fit only for remanufacture)	value	5 per cent.	—
Sheets and Plates	picul	33.950	1.70
Tacks	value	5 per cent.	—
Tubes	value	5 per cent.	—
Wire	picul	33.950	1.70
Wire Cable	value	5 per cent.	—
Wire Rope	value	5 per cent.	—
Iron and Steel, Ungalvanized (not including Bamboo, Spring, and Tool Steel) :—			
Anvils, Swage-blocks, Anchors, and Parts of, and Forgings (each weighing in every case 25 lb. or over)	picul	11.484	0.57
Bolts, Nuts, and Washers	value	5 per cent.	—
Castings, Rough	picul	5.132	0.26
Chains, and Parts of	,,	7.667	0.38
Cobbles, Wire Shorts, Defective Wire, Bar Croppings, and Bar Ends, Galvanized or Ungalvanized	,,	2.653	0.13
Crossings for Railways	value	5 per cent.	—
Fish-plates and Spikes	value	5 per cent.	—
Hoops	picul	5.451	0.27
Old (fit only for remanufacture)	picul	1.946	0.10
Nail rod, Bars, Twisted or Deformed Bars, Tees, Channels, Angles, Joists, Girders, and other Structural Sections or Shapes	,,	4.080	0.20
Nails, Wire and Cut	,,	5.946	0.30
Pig and Kentledge	,,	2.000	0.10
Pipes, Tubes, and Pipe and Tube Fittings	value	5 per cent.	—
Plate Cuttings	picul	2.311	0.12
Rails	,,	3.120	0.16
Rivets	,,	6.287	0.31
Screws	value	5 per cent.	—
Sheets and Plates ⅛ of an inch thick or more	picul	4.000	0.20
Sheets and Plates under ⅛ of an inch thick	,,	5.000	0.25
Tacks	,,	9.047	0.45
Wire	,,	5.241	0.26
Wire Rope, Galvanized or Ungalvanized...	,,	14.924	0.75
Wire with or without fibre core	,,		
Steel, Tool and Spring :—			
Bamboo Steel	picul	5.486	0.27
Spring Steel	,,	6.420	0.32
Tool Steel (including High-speed Steel)	value	5 per cent.	—
Iron and Steel, Galvanized :—			
Bolts, Nuts, Rivets, and Washers... ...	value	5 per cent	—
Pipes, Tubes, and Tube Fittings	,,	,,	—
Screws	,,	,,	—
Sheets, Corrugated and Plain	picul	7.400	0.37
Wire	,,	6.072	0.30

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
Wire Rope. See Ungalvanized.			
Wire Shorts. See Ungalvanized.			
Iron and Tin Dross	picul	6.000	0.30
Lead :—			
Old (fit only for remanufacture)	value	5 per cent.	—
Pigs or Bars	picul	9.000	0.45
Pipe	,,	9.961	0.50
Sheet	,,	11.854	0.59
Wire	value	5 per cent.	—
Manganese	,,	,,	—
Manganese Ferro	,,	,,	—
Nickel	picul	70.000	3.50
Quicksilver	,,	126.654	6.30
Tin :—			
Compound	value	5 per cent.	—
Dross and Refuse	picul	10.885	0.54
Ingots and Slabs	,,	45.462	2.30
Pipe	value	5 per cent.	—
Sheet	picul	41.208	2.10
Tinned Tacks	,,	9.047	0.45
Tinned Plates, Decorated	,,	10.176	0.51
Tinned Plates, Plain	,,	7.800	0.39
Tinned Plates, Old	value	5 per cent.	—
Type Metal	,,	,,	—
White Metal or German Silver :—			
Bars, Ingots, and Sheets	picul	54.531	2.70
Wire	,,	43.444	2.20
Zinc :—			
Powder and Spelter	picul	12.945	0.65
Sheets (including Perforated), Plates, and Boiler Plates	,,	16.649	0.84
FOOD, DRINK AND MEDICINE.			
Fishery and Sea Products:—			
Agar-agar	picul	6.000	0.30
Awabi, in bulk	,,	52.500	2.60
Bicho de Mar, Black, Spiked	,,	53.300	2.70
Bicho de Mar, Black, not Spiked	,,	40.000	2.00
Bicho de Mar, White	,,	20.500	1.00
Cockles, Dried	,,	13.822	0.69
Cockles, Fresh	,,	1.200	0.06
Compoy	,,	43.000	2.15
Crabs' Flesh, Dried	,,	16.513	0.83
Fish Bones	value	5 per cent.	—
Fish Cod, Dried	picul	5.900	0.29
Fish, Cuttle	,,	13.600	0.68
Fish, Dried and Smoked (not including Dried Codfish and Cuttle-fish)	,,	9.739	0.49
Fish, Fresh	,,	6,410	0.32
Fish, Maws, 1st Quality (i.e., weighing 1 catty or over per piece)	catty	5 000	0.25
Fish, Maws, 2nd Quality (i.e., weighing under 1 catty per piece)	picul	56.500	2.80
Fish, Salmon Bellies	value	5 per cent.	—
Fish, Salt	picul	3.600	0.18
Fish, Skin	,,	12,711	0.64
Mussels, Oysters, and Clams, Dried ...	,,	16.000	0.80
Prawns and Shrimps, Dried, in bulk ...	,,	22.000	1.10
Seaweed, Cut	,,	3.334	0.17
Seaweed, Long	,,	2.500	0.13
Seaweed, Prepared	,,	25.000	1.30
Seaweed, Red	value	5 per cent.	—
Sharks' Fins, Dorsal and Tail	picul	88.660	4.40
Sharks' Fins, Breast Fins	,,	37.173	1.90
Sharks' Fins, Prepared	,,	123.562	6.40
Seaweed Skins	value	5 per cent.	—
Animal Products, Canned Goods, and Groceries:—			
Bacon and Hams, in bulk	picul	35 300	1.80
Baking Powder	value	5 per cent.	—
Beef, Corned or Pickled, in Barrels ...	,,	,,	—
Birds' Nests, Black (including Clarified Refuse)	catty	3.000	0.15
Birds' Nests, White	,,	18.000	0.90
Butter	picul	53.276	2.70
Canned Goods :			
Asparagus	picul (Incl. weight of immediate packing.)	17.500	0.88
Awabi	,,	24.000	1.20
Cream and Milk, Evaporated or Sterlized	,,	13.000	0.65
Fruits, Table and Pie	picul (Incl. weight of immediate packing.)	14.500	0.73
Milk, Condensed	,,	19 200	0.96

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
Canned Goods, Unenumerated	value	5 per cent.	—
Chocolate	,,	,,	—
Cocoa	,,	,,	—
Coffee	,,	,,	—
Currants and Raisins, in bulk	picul	12.577	0.63
Fruits, Preserved, in Glass, etc.	value	5 per cent.	—
Honey	,,	,,	—
Jams and Jellies	,,	,,	—
Lard, in bulk	,,	,,	—
Macaroni and Vermicelli, in bulk	picul	9.125	0.46
Margarine	value	5 per cent.	—
Meats, Dried and Salted	,,	,,	—
Pork Rind	,,	,,	—
Sausages, Dry	,,	,,	—
Soy	picul	5.000	0.25
Tea	value	5 per cent.	—
Cereals, Fruits, Medicinal Substances, Seeds, Spices, and Vegetables:—			
Aniseed, Star :			
(*a*) 1st Quality (value Hk. Tls. 15 and over per picul)	picul	20.000	1.00
(*b*) 2nd Quality (value under Hk. Tls. 15 per picul)	,,	9,000	0.45
Apples, Fresh	,,	5 000	0.25
Asafœtida	value	5 per cent.	—
Barley, Pearl	,,	,,	—
Beans and Peas	,,	,,	—
Betelnuts, Dried	picul	4.700	0.24
Betelnut Husk, Dried	,,	2.300	0.12
Bran	,,	1.600	0.08
Cereals and Flour (including Barley, Maize, Millet, Oats, Paddy, Rice, Wheat, and Flour made therefrom; also Buckwheat and Buckwheat Flour, Cornflour and Yellow Corn Meal, Rye Flour, and Hovis Flour; but not including Arrowroot and Arrowroot Flour, Cracked Wheat, Germea, Hominy, Pearl Barley, Potato Flour, Quaker Oats, Rolled Oats, Sago and Sago Flour, Shredded Wheat, Tapioca and Tapioca Flour, and Yam Flour)	—	free	—
Camphor, Crude and Refined (including shaped)	picul	66.000	3.30
Camphor, Baroos, Clean	catty	62.000	3.10
Camphor, Baroos, Refuse	value	5 per cent.	—
Capoor Cutchery	,,	,,	—
Cardamom Husk	picul	5.000	0.25
Cardamoms, Inferior	,,	20.000	1.00
Cardamoms, Superior	,,	200.000	10.00
Cassia Lignea and Buds	,,	18.000	0.90
Cassia Twigs	,,	3.600	0.18
Chestnuts	value	5 per cent.	—
China-root	picul	14.000	0.70
Cinnamon, in bulk	picul	100.000	5.00
Cloves, in bulk	,,	18.000	0.30
Cloves, Mother	,,	8,000	0.40
Cocaine	value	5 per cent.	—
Galangal	picul	3.700	0.19
Ginseng, Clarified or Cleaned :			
1st Quality (value over Hk. Tls. 25 per catty)	catty	56.000	2.80
2nd Quality (value over Hk. Tls. 11 and not over Hk. Tls. 25 per catty)	,,	22.000	1.10
3rd Quality (value over Hk. Tls. 3 and not over Hk. Tls. 11 per catty)	,,	7.200	0.36
4th Quality (value not over Hk. Tls. 3 per catty)	,,	1.800	0.09
Ginseng, Crude, Beard, Roots, and Cuttings :			
1st Quality (value over Hk. Tls. 3 per catty)	,,	4.400	0.22
2nd Quality (value not over Hk. Tls. 3 per catty)	,,	1.700	0.085
Ginseng, Wild	value	5 per cent.	—
Groundnuts, in Shell	picul	3.000	0.15
Groundnuts, Shelled	,,	4.600	0.23
Hops	value	5 per cent.	—
Isinglass, Vegetable	picul	53.000	2.70
Lemons, Fresh	thousand	29.000	1.50
Lichees, Dried	picul	10.600	0.53
Lily Flowers, Dried	,,	9.400	0.47
Lungngan Pulp	,,	13.000	0.65
Lungngans, Dried	,,	7.600	0.38
Malt	,,	8.102	0.41
Morphia in all forms	value	5 per cent.	—
Mushrooms	picul	47.000	2.40
Nutmegs	,,	30.000	1.50
Olives	value	5 per cent.	—
Opium, Tincture of	,,	,,	—
Oranges, Fresh	picul	3.600	0.18
Peel, Orange, in bulk	,,	13.000	0.65
Pepper, Black	,,	19.400	0.97
Pepper, White	,,	32.000	1.60
Potatoes, Fresh	value	5 per cent.	—
Putchuck	picul	38.000	1.90
Seed, Apricot	,,	26.000	1.30
Seed, Lily Flower (i.e., Lotus-nuts without Husks)	picul	20.000	1.00
Seed, Lucraban	,,	7.000	0.35
Seed, Melon	,,	11.000	0.55
Seed, Pine (i.e., Fir-nuts)	,,	4.800	0.24
Seed, Sesamum	,,	4.800	0.24
Vegetables, Dried, Prepared, and Salted	value	5 per cent.	—
Sugar:—			
Sugar, Brown, under No. 11 Dutch Standard, and "Green Sugar"	picul	4.400	0.22
Sugar, White, over No. 10 Dutch Standard (including Refined Sugar)	,,	6.200	0.31
Sugar, White, Cube and Loaf	,,	10.000	0.50
Sugar, Candy	,,	7.400	0.37
Sugar, Cane	,,	1.000	0.05
Wines, Beer, Spirits, Table Waters, etc.:—			
Champagne and any other Wine sold under the label "Champagne"	Case of 12 bottles or 24 ½-bottles	20.000	1.00
Sparkling Asti	,,	10.000	0.50
Other Sparkling Wines	,,	12.000	0.60
Still Wines, Red or White, exclusively the produce of the natural fermentation of grapes (not including Vins de Liqueur) :			
(1) In Bottles	Case of 12 bottles or 24 ½-bottles	6.000	0.30
(2) In bulk	Imperial gallon	0.700	0.035
Port Wine, in Bottles	Case of 12 bottles or 24 ½-bottles	14.000	0.70
Port Wine, in bulk	Imperial gallon	3.500	0.18
Marsala, in Bottles	Case of 12 bottles or 24 ½-bottles	8.000	0.40
Marsala, in bulk	Imperial gallon	2.000	0.10
Vins de Liqueur other than Port and Marsala (viz., Madeira, Malaga, Sherry, etc.) :—			
(1) In Bottles	Case of 12 bottles or 24 ½-bottles	10.000	0.50
(2) In bulk	Imperial gallon	3.000	0.15
Vermouth, Byrrh, and Quinquina	Case of 12 litres	5.800	0.29
Saké, in Barrels	picul	8.200	0.41
Saké, in Bottles	12 reputed quarts or 24 reputed pints	2.000	0.10
Ale, Beer, Cider, Perry, and similar Liquors made of Fruits and Berries :—			
(1) In Bottles	12 reputed quarts or 24 reputed pints	1.580	0.079
(2) In Casks	Imperial gallon	0.540	0.027
Porter and Stout, in Bottles	12 reputed quarts or 24 reputed pints	2.560	0.13
Porter and Stout, in Casks	Imperial gallon	0.500	0.025
Brandy, Cognac, and Whisky, in bulk	,,	2.600	0.13
Brandy and Cognac, in Bottles	Case of 12 reputed quarts	13.400	0.67
Whisky, in Bottles	,,	7.000	0.35
Gin, in Bottles	,,	4.600	0.23
Gin, in bulk	Imperial gallon	1.800	0.09
Other Spirits (*i.e.*, Rum, Aquavit, Vodka, Punch, etc.) :—			
(1) In Bottles	Case of 12 reputed quarts	4.000	0.20

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
(2) In bulk	Imperial gallon	1.800	0.09
Liqueurs	12 reputed quarts or 24 reputed pints	10.000	0.50
Waters, Table, Aerated and Mineral	12 bottles or 24 ½-bottles	1.400	0.07
Spirits of Wine and Rectified Spirits or Alcohol	Imperial gallon	0.560	0.028

TOBACCO.

Cigarettes, value over Hk. Tls. 4.50 per 1,000 and all Cigarettes not bearing a distinctive brand or name on each Cigarette	Thousand	5.600	0.33
Cigarettes, value over Hk. Tls. 3.00 but not over Hk. Tls. 4.50 per 1,000	,,	3.800	0.19
Cigarettes, value over Hk. Tls. 1.50 but not over Hk. Tls. 3.00 per 1,000	,,	2.200	0.11
Cigarettes, value Hk. Tls. 1.50 or less per 1,000	,,	1.200	0.06
Cigars	,,	16.000	0.80
Snuff	value	5 per cent.	—
Tobacco, Leaf	picul	22.000	1.10
Tobacco, Prepared, in tins or packages under 5-lb. each	value	5 per cent.	—
Tobacco, Prepared, in bulk (not packed in tins or tin-lined cases)	picul	22.000	1.10
Tobacco, Stalk	,,	5.600	0.28

CHEMICALS AND DYES.

Chemicals:—

Acid, Acetic	picul	30.639	1.50
Acid, Boracic	,,	21.448	1.10
Acid, Carbolic	value	5 per cent.	—
Acid, Hydrochloric (i.e., Muriatic)	value	5 per cent.	—
Acid, Nitric	picul	14.282	0.71
Acid, Sulphuric	,,	3.317	0.17
Ammonia, in bulk	,,	26.513	1.30
Ammonia, Chloride of (i.e., Sal Ammoniac)	,,	17.823	0.89
Ammonia, Sulphate of	,,	7.438	0.37
Bleaching Powder (i.e., Chloride of Lime)	,,	5.469	0.27
Borax, Crude or Refined	,,	11.521	0.58
Calcium, Carbide of	,,	7.451	0.37
Copper, Sulphate of	,,	11.313	0.60
Glycerine	,,	43.930	2.20
Hide Specific	value	5 per cent.	—
Manure, Animal, Chemical, or Artificial, not otherwise enumerated	picul	2.951	0.15
Naphthalene	,,	12.653	0.63
Saltpetre	,,	9.324	0.47
Soda Ash	,,	2.499	0.12
Soda, Bicarbonate of, in bulk	,,	2.699	0.14
Soda, Caustic	,,	6.200	0.31
Soda, Crystal	,,	2.659	0.13
Soda, Crystal Concentrated	,,	3.178	0.15
Soda, Nitrate of (Chile Saltpetre)	,,	5.342	0.27
Soda, Silicate of	,,	3.603	0.13

Dyes and Pigments:—

Aniline Dyes not otherwise enumerated	value	5 per cent.	—
Bark, Mangrove	picul	1.682	0.034
Bark, Plum-tree	,,	3.187	0.15
Bark, Yellow (for Dyeing)	,,	4.948	0.25
Blue, Paris or Prussian	,,	34.945	1.70
Bronze Powder	,,	52.979	2.60
Carbon Black (i.e., Lampblack)	,,	20.000	1.00
Carthamin	value	5 per cent.	—
Chrome Yellow	,,	5 per cent.	—
Cinnabar	picul	82.450	4.10
Cobalt, Oxide of	value	5 per cent.	—
Cochineal	value	5 per cent.	—
Cunao or False Gambier	picul	3.340	0.17
Cutch or Gambier	,,	10.000	0.50
Dyes and Colours, Unclassed	value	5 per cent.	—
Gamboge	picul	56.951	2.80
Green, Emerald, Schweinfurt, or Imitation	,,	22.453	1.10
Hartall (Orpiment)	,,	9.552	0.48
Indigo, Dried, Artificial	,,	125.881	6.30
Indigo, Liquid, Natural	,,	6.000	3.00
Indigo, Liquid or Paste, Artificial	,,	40.000	2.00
Indigo, Liquid Natural	,,	6.000	0.30
Indoin	value	5 per cent.	—
Laka-wood	picul	3.272	0.16
Lead, Red, White, and Yellow	,,	10.294	0.51
Logwood Extract	,,	15.492	0.77
Nutgalls	,,	20.863	1.00

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
Ochre	picul	6.545	0.33
Safflower	,,	12.908	0.65
Sapanwood	,,	2.744	0.14
Smalt	,,	40.150	2.00
Turmeric	,,	3.938	0.20
Ultramarine	,,	13.862	0.69
Vermilion	,,	82.400	4.10
Vermilion, Artificial	value	5 per cent.	—
White Zinc	,,	5 per cent.	—

CANDLES, GUMS, OILS, SOAP, VARNISHES, WAX AND MANUFACTURES OF.

Candles	picul	12.600	0.63
Candlewick	,,	75.200	3.80
Gasolene, Naphtha, and Benzine, Mineral:			
(a) In bulk	10 Am. galls.	3.000	0.15
(b) In case	Case of 2 tins, each of 5 Am. gallons	3.500	0.18
Grease, Lubricating, wholly or partly mineral	picul	7.000	0.35
Gum Arabic	,,	24.000	1.20
Gum Benjamin	,,	12.000	0.60
Gum Copal	,,	24.000	1.20
Gum Dragon's-blood	,,	60.000	3.00
Gum Myrrh	,,	9.600	0.48
Gum Olibanum	,,	9.600	0.48
Gum Resin	,,	6.800	0.34
Gum Shellac	,,	40.000	2.00
Gum Sticklac	,,	15.000	0.75
Gum Tragacanth	,,	18.000	0.90
Oil, Castor, Lubricating	,,	12.000	0.60
Oil, Castor, Medicinal	value	5 per cent.	—
Oil, Coconut	picul	16.000	0.80
Oil, Kerosene:			
(a) In case	Case of 2 tins, each of 5 Am. gallons.	2.200	0.11
(b) In bulk	10 Am. galls.	1.600	0.08
(c) Tins, empty	tin	0.200	0.01
(d) Case and two empty tins	each	0.540	0.027
Oil, Linseed	Imperial gallon	1.200	0.06
Oil Lubricating:			
(a) Wholly or partly of Mineral origin	Am. gall.	0.300	0.015
(b) Other kinds, not otherwise enumerated	,,	0.500	0.025
Oil, Olive, in bulk	Imperial gallon	2.000	0.10
Soap, Household and Laundry (including Blue Mottled), in bulk, Bars, and Doublets: duty to be charged on nominal weights, provided that such weights be not less than true weights and that a bar does not weigh less than 7-oz.	picul	8.800	0.44
Soap, Toilet and Fancy	value	5 per cent.	—
Stearine	picul	19.600	0.98
Turpentine:			
(a) Mineral	Imperial gallon	0.600	0.03
(b) Vegetable	,,	0.800	0.04
Wax, Bees, Yellow	picul	32.000	1.60
Wax, Paraffin	,,	10.000	0.50
Wax, Vegetable	,,	15.200	0.76

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PAPER, WOOD PULP, BOOKS AND MAPS.

Paper, Cigarette, on bobbins	picul (Incl. weight of bobbin.)	40.00	2.00
Paper, Common Printing, Calendered and Uncalendered, Sized and Unsized, White and Coloured	picul	6.40	0.32
Paper, Marbled, Enamelled, and Glazed Flint	,,	12.20	0.61
Paper, M. G. Cap, White and Coloured	picul	6.40	0.32
Paper, Packing and Wrapping, Brown or Coloured	,,	6.40	0.32
Paper, Printing, Calendered and Uncalendered, Sized and Unsized, White and Coloured (including Simile and M. G. Poster, but not including Printing Paper otherwise enumerated), free of mechanical wood pulp	,,	9.20	0.46
Paper, Strawboard	value	5 per cent.	—
Paper, Unenumerated	,,	,,	—

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
Paper, Unglazed Tissue and M. G. Bleached Sulphite, free of mechanical wood pulp	picul	10.00	0.50
Paper, Writing, Drawing, Art Printing, Bank-note, Parchment, Pergamyn, and Grease-proof	value	5 per cent.	—
Wood Pulp, Chemical	picul	6.00	0.30
Wood Pulp, Mechanical :—			
(*a*) Dry	picul	3.32	0.17
(*b*) Wet (not containing less than 40 per cent. moisture)	,,	1.66	0.083
Books	—	free	—
Charts and Maps	—	,,	—
Newspapers and Periodicals	—	,,	—
ANIMAL SUBSTANCES, RAW AND PREPARED.			
Hides, Leather, and Skins (Furs):—			
Hides, Buffalo and Cow	picul	22.00	1.10
Leather Belting	value	5 per cent.	—
Leather, Calf, Kid, Enamelled, Japanned, Patent, and/or Coloured	picul	300.00	15.00
Leather, Cow (including that for Soles and Harness)	picul	58.00	2.90
Leather, Cow, Enamelled, Japanned, and Patent	,,	180.00	9.00
Skins (Furs), Beaver	value	5 per cent.	—
Skins (Furs), Dog	,,	,,	—
Skins (Furs), Fox	,,	,,	—
Skins (Furs), Fox, Arctic, White	,,	,,	—
Skins (Furs), Fox Legs	,,	,,	—
Skins (Furs), Fox Legs	,,	,,	—
Skins (Furs), Fox, Red	,,	,,	—
Skins (Furs), Goat, Tanned	,,	,,	—
Skins (Furs), Goat, Untanned	,,	,,	—
Skins (Furs), Hare and Rabbit	,,	,,	—
Skins (Furs), Lamb	,,	,,	—
Skins (Furs), Lamb, Unborn	,,	,,	—
Skins (Furs), Land-otter	,,	,,	—
Skins (Furs), Lynx	,,	,,	—
Skins (Furs), Marten, Untanned	,,	,,	—
Skins (Furs), Musquash	,,	,,	—
Skins (Furs), Raccoon	,,	,,	—
Skins (Furs), Sable	,,	,,	—
Skins (Furs), Sheep, Untanned	,,	,,	—
Skins (Furs), Squirrel	,,	,,	—
Skins (Furs), Wolf	,,	,,	—
Bones, Feathers, Hair, Horns, Shells, Sinews, Tusks, etc.:—			
Bones, Tiger	picul	56.00	2.80
Cow Bezoar, Indian	value	5 per cent.	—
Crocodile and Amadillo Scales	picul	59.00	3.00
Elephants' Tusks, Whole or Parts of	catty	3.60	0.18
Feathers, Kingfisher, Whole Skins	hundred	12.00	0.60
Feathers, Kingfisher, Part Skins (i.e., Wings, Tails, or Backs)	,,	3.00	0.40
Feathers, Peacock	value	5 per cent.	—
Hair, Horse	picul	42.00	2.10
Hair, Horse Tails	,,	50.00	2.50
Horns, Buffalo and Cow	,,	13.00	0.65
Horns, Deer	,,	34.00	1.70
Horns, Deer, Old	,,	140.00	7.00
Horns, Deer, Young (Northern)	pair	50.00	2.50
Horns, Deer, Young (Southern)	value	5 per cent.	—
Horns, Rhinoceros	catty	80.00	4.00
Musk	,,	180.00	9.00
Sea-horse Teeth	value	5 per cent.	—
Sinews, Cow and Deer	picul	20.00	1.00
TIMBER, WOOD, BAMBOOS AND RATTANS.			
Timber:—			
Laths	1,000 pieces	4.20	0.21
Ordinary (not including Teak and other enumerated Woods), Rough Hewn :			
Hardwood	1,000 sup. ft., B.M.	29.00	1.45
Softwood	,,	23.00	1.15
Ordinary, Sawn :			
Hardwood	1,000 sup. ft., B.M.	36.00	1.80
Softwood	,,	30.00	1.50
Ordinary, Manufactured (including any process further than simple sawing), exclusive of Masts and Spars :			
Hardwood :			
(*a*) Clear	1,000 sup. ft., net measure B.M.	60.00	3.00
(*b*) Merchantable	,,	42.00	2.10
Softwood :			
(*a*) Clear	1,000 sup. ft., net measure B.M.	50.00	2.50
(*b*) Merchantable	,,	36.00	1.80
Ordinary, Masts and Spars	value	5 per cent.	—
Railway Sleepers	,,	,,	—
Teak-wood, Beams and Planks	1,000 sup. ft., B.M.	135.00	6.75
Wood, Bamboos, Rattans, etc.:—			
Canes, Bamboo	thousand	8.40	0.42
Rattan Skin	picul	15.00	0.75
Rattans, Core or Whole	,,	6.41	0.32
Rattans, Split	,,	6.70	0.34
Wood, Camagon	,,	3.20	0.16
Wood, Camphor	value	5 per cent.	—
Wood, Ebony	,,	,,	—
Wood, Fragrant	,,	,,	—
Wood, Garoo	catty	2.40	0.12
Wood, Kranjee	value	5 per cent.	—
Wood, Laka. See Dyes.			
Wood, Lignum-vitæ	value	5 per cent.	—
Wood, Oil	,,	,,	—
Wood, Puru	catty	1.80	0.09
Wood, Red and Rose	,,	4.10	0.21
Wood, Sandal	picul	8.60	0.43
Wood, Sandal Dust	value	5 per cent.	—
Wood, Span. See Dyes.			
Wood, Scale Sticks	piece	0.18	0.009
Wood, Scented	value	5 per cent.	—
Wood, Shavings, Hinoki	,,	,,	—
Wood, Veneer	,,	,,	—

In this Tariff, by Softwood is meant the wood of any coniferous tree and of all trees with "needle" or spiuous leaves, e.g., Pines, Firs, Spruces, Larches, Cedars, Yews, Junipiers, and Cypresses. The wood of all trees with broad leaves is to be classed as Hardwood.

COAL, FUEL, PITCH AND TAR.			
Coal	ton	5.400	0.27
Coal, Briquettes	,,	10.000	0.50
Charcoal	picul	1.093	0.05
Coke	ton	10.902	0.55
Liquid Fuel	,,	14.572	0.73
Pitch	picul	4.709	0.24
Tar, Coal	,,	1.600	0.08
CHINAWARE, ENAMELLED WARE, GLASS, ETC.			
Basins, Tin	gross	6.000	0.30
Chinaware	value	5 per cent.	—
Enamelled Ironware :—			
Mugs, Cups, Basins, and Bowls, not over 11 centimetres in diameter	dozen	1.000	0.05
Basins and Bowls, over 22 centimetres but not over 35 centimetres in diameter	,,	2.000	0.10
Enamelled Ironware, Unenumerated	value	5 per cent	—
Glass and Crystal Ware	,,	,,	—
Glass Plate, Silvered, Bevelled or Unbevelled, not over 5 square feet each	square foot	0.560	0.028
Glass Plate, Silvered, Bevelled or Unbevelled, over 5 square feet each	,,	0.840	0.042
Glass Plate, Unsilvered	value	5 per cent.	—
Glass Window, Common, not over 32 oz. in in weight per square foot	100 sq ft.	5.000	0.25
Glass Window, Coloured	,,	12.000	0.60
Glass Mirrors. See No. 589	value	5 per cent.	—
EARTH, PRECIOUS STONES, STONES AND ARTICLES MADE OF.			
Amber	,,	,,	—
Cement	picul	0.900	0.045
Coral Beads	catty	15.000	0.80
Cornelian Beads	value	5 per cent.	—
Cornelian Stones, Rough	hundred	6.000	0.30
Corundum Sand	picul	3.800	0.19
Emery and Glass Powder. See No. 564	,,	2.400	0.12
Emery-cloth and Sand-paper. See No. 577		—	—
Fire-bricks	value	5 per cent.	—
Fireclay	picul	1.220	0.061
Flints (including Flint Pebbles)	,,	0.800	0.04
Tiles	value	5 per cent.	—
MISCELLANEOUS.			
Asbestos:—			
Asbestos Boiler Composition	picul	3.600	0.18
Asbestos Fibre and Metallic Packing	,,	64.000	3.20
Asbestos Millboard	,,	8.000	0.40
Asbestos Sheets and Packing	,,	44.000	2.20
Asbestos Yarn	,,	40.000	2.00

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
Bags, Mats, and Matting:—			
Bags, Cotton, New	picul	40.000	2.00
Bags, Gunny, New. See No. 57	,,	8.480	0.42
Bags, Gunny, Old. See No. 58	value	5 per cent.	—
Hemp or Hessian Bags, New. See No. 60	picul	13.900	0.95
Hemp or Hessian Bags, Old. See No. 61	value	5 per cent.	—
Bags, Straw and Grass	thousand	30.000	1.50
Mats, Coir (Door)	dozen	8.000	0.40
Mats, Fancy	value	5 per cent.	—
Mats, Formosa Grass (Bed)	each	4.700	0.24
Mats, Rattan	value	5 per cent.	—
Mats, Rush	hundred	71.000	3.60
Mats, Straw	,,	5.100	0.26
Mats, Tatami	each	0.320	0.016
Matting, Coir, 36-in. by 100 yds.	roll of 100 yards	37.100	1.90
Matting, Straw, 36-in. by 40 yds.	roll of 40	5.000	0.25
Buttons:—			
Buttons, Fancy (Glass, Jewellery, etc.)	value	5 per cent.	—
Buttons, Metal (not including those made of Precious Metals or plated with Precious Metals)	gross	0.400	0.02
Buttons, Porcelain	12 gross	0.340	0.017
Buttons, Shell	gross	0.420	0.021
Fans, Umbrellas, and Sunshades:—			
Fans, Palm-leaf, Coarse	thousand	7.000	0.35
Fans, Palm-leaf, Fancy	,,	20.000	1.00
Fans, Palm-leaf, Fine	,,	12.000	0.60
Fans, Paper or Cotton	,,	47.000	2.40
Fans, Silk	value	5 per cent.	—
Umbrellas and Sunshades:			
With Handles wholly or partly of Precious Metals, Ivory, Mother-of-Pearl, Tortoiseshell, Agate, etc., or Jewelled	value	5 per cent.	—
With all other Handles, all Cotton:			
(a) Length of rib not over 17-in.	value	5 per cent.	—
(b) Length of rib over 17-in.	each	0.440	0.022
With all other Handles, Mixtures, not Silk	,,	0.730	0.037
With all other Handles, Silk and Silk Mixtures	,,	1.300	0.065
Files and Needles:—			
Files of all kinds:			
Filing surface only, not over 4-in. long	dozen	1.300	0.065
Filing surface only, over 4-in. but not over 9-in. long	,,	2.700	0.14
Filing surface only, over 9-in. but not over 14-in. long	,,	5.000	0.25
Filing surface only, over 14 in. long	,,	12.000	0.60
Needles, Nos. 7/0 and 6/0	100 mile	54.000	2.70
Needles, Nos. 3/0 and 2/0	,,	50.000	2.50
Needles, Assorted (not including 7/0)	,,	40.000	2.00
Matches and Match-making Materials:—			
Matches, Wood, Safety or other:			
Small, in boxes not over 2-in. by 1⅜ in. by ⅝ in.	100 gross box	13.400	0.92
Large, in boxes not over 2½ in. by 1⅛ in. by ¾ in.	50 gross bx	16.000	0.80
In boxes over above sizes	value	5 per cent.	—
Chlorate of Potash	picul	36.000	1.80
Emery and Glass Powder	,,	2.400	0.12
Labels	value	5 per cent.	—
Phosphorus	picul	70.000	3.50
Wax, Paraffin. See No. 406	,,	10.000	0.50
Wood Shavings	,,	2.200	0.11
Wood Splints	,,	2.000	0.10
Metal Threads and Foil:—			
Thread, Gold, Imitation, on Cotton	catty	3.000	0.15
Thread, Silver, Imitation, on Cotton	,,	1.800	0.09
Thread, Gold and Sliver, Imitation, on Silk	value	5 per cent.	—
Tinfoil	picul	63.000	3.20
Sundry:—			
Bamboo Baskets, Bamboo Blinds, and other Bamboo Ware	value	5 per cent.	—
Bent-wood Chairs	,,	5 per cent.	—
Coir Yarn	,,	5 per cent.	—
Cordage and Twine	,,	5 per cent.	—
Emery-cloth and Sand-paper (sheet not over 144 square inches)	ream	5.000	0.25
Furniture and other Woodware	value	5 per cent.	—
Glue (not including Fish Glue)	picul	20.000	1.00
Glue, Cow, Refuse	,,	20.000	1.00
Glue, Fish	,,	75.857	3.80

Name of Article	Agreed Value Per	Agreed Value Hk. Tls.	Proposed Duty Rate Hk. Tls.
India-rubber and Gutta-percha, Crude	value	5 per cent.	—
India-rubber, Old or Waste	...	5 per cent.	—
Inks of all kinds	,,	5 per cent.	—
Insect Powder	,,	5 per cent.	—
Lampwick	picul	54.600	2.70
Leather Purses	gross	11.200	0.56
Machines, Sewing and Knitting	value	5 per cent.	—
589 Mirrors	,,	5 per cent.	—
Moulding, Picture	,,	5 per cent.	—
Oakum	picul	12.600	0.63
Rope	value	5 per cent.	—
Shoes and Boots	,,	5 per cent.	—
Starch	,,	5 per cent.	—
Sulphur	,,	5 per cent.	—
Tinder	picul	9.000	0.45
Worm Tablets, in Bottles, not over 60 pieces	dozen	0.740	0.037
UNENUMERATED GOODS.			
Unenumerated Goods	value	5 per cent.	—

RULES.

RULE I.

Imports unenumerated in this Tariff will pay Duty at the rate of 5 per cent. ad valorem; and the value upon which Duty is to be calculated shall be the wholesale market value of the goods in local currency. This market value when converted into Haikwan Taels shall be considered to be 12 per cent. higher than the amount upon which Duty is to be calculated.

If the goods have been sold before presentation to the Customs of the Application to pay Duty, the gross amount of the *bonâ fide* contract will be accepted as evidence of the market value. Should the goods have been sold on c. f. and i. terms, that is to say, without inclusion in the price of Duty and other charges, such c. f. and i. price shall be taken as the value for Duty-paying purposes without the deduction mentioned in the preceding paragraph.

If the goods have not been sold before presentation to the Customs of the Application to pay Duty, and should a dispute arise between Customs and importer regarding the value or classification of goods, the case will be referred to a Board of Arbitration composed as follows:—

An official of the Customs;

A merchant selected by the Consul of the importer; and

A merchant, differing in nationality from the importer, selected by the Senior Consul.

Questions regarding procedure, etc., which may arise during the sittings of the Board shall be decided by the majority. The final finding of the majority of the Board, which must be announced within fifteen days of the reference (not including holidays), will be binding upon both parties. Each of the two merchants on the Board will be entitled to a fee of Ten Haikwan Taels. Should the Board sustain the Customs valuation, or, in the event of not sustaining that valuation, should it decide that the goods have been undervalued by the importer to the extent of not less than 7½ per cent., the importer will pay the fees; if otherwise, the fees will be paid by the Customs. Should the Board decide that the correct value of the goods is 20 per cent. (or more) higher than that upon which the importer originally claimed to pay Duty, the Customs authorities may retain possession of the goods until full Duty has been paid and may levy an additional Duty equal to four times the Duty sought to be evaded.

In all cases invoices, when available, must be produced if required by the Customs.

RULE II.

The following will not be liable to Import Duty: Foreign Rice, Cereals, and Flour; Gold and Silver, both Bullion and Coin; Printed Books, Charts, Maps, Periodicals, and Newspapers.

A freight or part freight of Duty-free commodities (Gold and Silver Bullion and Foreign Coins excepted) will render the vessel carrying them, though no other cargo be on board, liable to Tonnage Dues.

Drawbacks will be issued for Ships' Stores and Bunker Coal when taken on board.

RULE III.

Except at the requisition of the Chinese Government, or for sale to Chinese duly authorized to purchase them, Import trade is prohibited in all Arms, Ammunition, and Munitions of War of every description. No Permit to land them will be issued until the Customs have proof that the necessary authority has been given to the importer. Infraction of this rule will be punishable by confiscation of all the goods concerned. The import of Salt is absolutely prohibited.

China's Mineral Resources

By V. K. Ting, Director of the Geological Survey of China

For the benefit of our readers abroad we may state that Mr. Ting is the very accomplished Director of the Geological Survey of China. Having studied in Japan, Belgium, Germany, England, and finally having graduated at the University of Glasgow under the well known Professor J. W. Gregory, Mr. Ting represents the type of young Chinese of whom there is a larger number than foreigners realize,—who are working quietly and thoroughly at the great task of rejuvenating China. What Mr Ting writes is worthy of especial attention since it is based upon first hand knowledge and comes from one who has had the benefit of both a Chinese and a foreign education.

China's Mineral Resources

Marco Polo was the first European to be impressed by the mineral wealth of China, and many interesting descriptions of the mining industry in his time are to be found scattered through his book. Modern travellers have more or less confirmed his impressions, and throughout the latter half of the 19th century China enjoyed the reputation of fabulous richness in mineral deposits—a reputation that cost China rather dearly, for it was the direct cause of the mad rush for concession-hunting and the sum spent by the Chinese Government in buying back these impossible concessions during the last 10 years amounted to nearly $10,000,000.

Of late a reaction has set in: China has become somewhat better known, and European engineers who came out with vague but enormous expectations have not unnaturally been disappointed as they find that the native mining industry has lost its importance in relation to the world's production and that the outcrops of mineral deposits have generally been worked out. Hence the idea that China is rather poor in mineral deposits has been gaining ground among mining engineers, though this idea has not yet had time to spread among the larger public.

Both of these impressions are unjustified in the light of recent knowledge. It is to be remembered that the immense mineral deposits found in North America are exceptions rather than the rule, and, apart from coal, of which we have a better knowledge owing to the extensive development of mining, deposits of the North American magnitude are still unknown in China. and many of the famous deposits, for example, the Shansi iron ore, have been proved to be unsuitable for large scale mining. On the other hand China is quite a continent in itself. Even in the light of probability there is no reason to doubt that it has a reasonable share of the world's mineral wealth, and a more close study of the known deposits tends to confirm this supposition. It should be understood at once that the time has not yet come for writing a summary of the mineral resources of China, for to do that requires years of work, but in this paper I shall endeavor to give a brief account of what is actually known.

COAL.

China is undoubtedly very rich in coal; there is not a single province in which coal is not known to occur, but some are more favored than others. Owing to the absence of folding, and the occurrence of normal faulting—two conditions very favorable for the preservation of large coal fields—the northeastern provinces, Shansi, Chihli, Shantung and Honan are certainly most important; Shansi in fact is the richest of all. Inner Mongolia and Manchuria are also fairly well supplied with coal, though in the former case it is less known. The northwestern provinces are much poorer but Kansu and Turkestan contain a number of considerable coalfields. The Yangtze valley and the southeastern coastal provinces have as a whole rather limited resources and the geological conditions are not favorable for the discovery of new fields. Hunan and Kiangsi form exceptions in this respect; the latter is the Shansi of Southern China. The three western provinces, Szechwan, Yunnan and Kueichow are known to possess coal in very numerous localities, but on the whole they are much less important as the seams are usually much thinner and the fields are broken up into small patches.

The most important coal deposits are of Permean or Upper Carboniferous age. The great coal basins now worked on a large scale in the north all belong to this formation. The coal is always underlaid by the great Ordovician limestone and covered by sandstone of continental origin. This is, however, by no means the only coal that occurs in China. The well known field of Fushun in Manchuria is considered to be Tertiary. The famous Tatungfu field in North Shansi and many other basins in Chihli and Inner Mongolia as well as the coal in the Red Basin of Szechwan are probably Middle Jurassic, whilst Rhetic coal is found side by side with that of Permean in Kiangsi and Hunan. It is safe to say, however, that the Perme carboniferous coal is by far the most extensive.

Both bituminous coal and anthracite occur in China, but the latter is probably more abundant, for though the character of coal is independent of its geological age, the proportion of anthracite is greater in the Palaeozoic. Both kinds are generally of excellent quality; the anthracite of Shansi and the bituminous coal of Shantung compare well with the best of their kind in other parts of the world.

With regard to the total reserve of workable coal in China we have no sufficient data to make a reliable estimate, but it is safe to say that as far as present knowledge goes 100,000,000,000 metric tons is a fair minimum figure and the probable real resource may be ten times as large.

The total production for 1915 is estimated at about 18,000,000 tons. Nearly 8,000,000 tons came from modern mines.

The following is a fairly complete list:—

Name of the Mine	Locality	Nationality	Production
Kailan Mining Administration	Kaiping and Lanchow, Chihli	Sino-British	2,971,792 tons
Fushun Colliery	Fushun, Mukden	Japanese	2,034,856 ,,
Pingshiang Colliery	Pingshiang Kiangsi	Chinese	927,463 ,,
Peking Syndicate	Chaotso, Honan	British	480,875 ,,
Pengshihu Coal Mining Company	Pengshihu, Mukden	Sino-Japanese	275,777 ,,
Lincheng Coal Mining Administration	Lincheng, Chihli	Sino-Belgian	259,703 ,,
Chungshing Coal Mining Company	Yishien, Shantung	Chinese	244,825 ,,
Tsingching Mining Administration	Tsingching, Chihli	Sino-German	179,154 ,,
Paoching Company	Yangchuan, Shansi	Chinese	131,386 ,,
Liuhokou Coal Mining Company	Liuhokou, Honan	Chinese	91,822 ,,
Tungshing Company	Mentoukou, Chihli	Sino-British	80,000 ,,

The German mines of Fangtse and Hungshan in Shantung produced about 560,000 tons in 1914, but stopped in 1915 owing to the war.

The 10 million tons left over are attributed to small native mines scattered all over the country. Shansi is easily the biggest producer, Hunan and Szechwan come next; the three provinces together produce about five million tons.

From the above statement it is clear that the consumption of coal in China is surprisingly small when compared with her population. The lack of transport is the primary cause of this small output. The use of coal is, however, rapidly increasing and at present 1,500,000 tons of foreign coal are annually imported. When railway facilities increase this import is bound to decrease, and the example of Kailan Mining Administration in exporting coal to the Pacific countries is sure to be followed by the more favorably situated mines. This is especially true of bituminous coal. Anthracite will have to depend largely on domestic consumption which is also on the increase, for example, in the Lower Valley of the Yangtze where straw and dry grass have been exclusively used as fuel, Shansi and Hunan anthracite begin now to find their way to the market.

IRON.

Roughly speaking we have two fundamentally different classes of iron deposits; (1) deposits of igneous origin, usually found at the contact zone; (2) bedded deposits some of which are undoubtedly sedimentary, but others of doubtful genetic relations. To the former class belong the famous deposit of Tayeh worked by the Hanyehping Co. Deposits of similar origin but of varying size are extremely numerous, especially in the Lower Yangtze Valley. They are invariably associated with igneous rocks of the diorite type intruded into the upper palæozoic formations. The ore is usually found at the contact zone, often in limestone with the development of typical contact minerals as, for example, garnet. Besides the Tayeh deposit, the principal deposits of economic value are the Aocheng (Wuchang) deposit in Hupeh, the Chengmenshan deposit near Kiukiang in Kiangsi, the Taiping and the Fangchang deposits in Anhui, the newly discovered deposit near Nanking, the Tsinglingchong deposits near the German railway in Shantung, and the Anchi deposit in Fukien. Among the smaller but well known deposits we may mention the Tungkuanshan deposit in Anhui and the Likwoyi deposit in Kiangsu, both of which belong to this class.

The bedded deposits of sedimentary origin are the most famous. The Shansi iron industry, which is certainly the oldest in the world, is the classic example. The ore occurs in the lower part of palæozoic coal series near the underlying Ordovician limestone, either as limonite or hematite, and occasionally hematite pockets are found in the lower limestone itself The ore has been extensively mined in two regions in Shansi; the one in the Pingtinghow district forming a narrow belt across the Shansi Railway, the other in southeast Shansi in the districts of Luan and Tzechow. Unfortunately the ore body consists usually of irregular lenses, the average thickness of which is probably not much more than 30 cm.—a fact which excludes the possibility of mining on a modern scale, otherwise the enormous horizontal distribution would give it an immense importance.

The second class of bedded deposits is exclusively found in the Precambrian rocks. They are usually well bedded and some of them are probably of sedimentary origin, but as the country rock is more or less metamorphosed their genetic relation is somewhat uncertain. These deposits have recently acquired great importance as the ores found between Pengshihu and the South Manchurian Railway are now being worked by the Japanese. The best known deposit is, however, that of Lanchow near the coal mines, but the percentage is unfortunately rather low. The well-known iron ore of Pinghsiang in Kiangsi and that of the adjacent district Yushien in Hunan may prove to be of the same nature.

It is impossible to estimate exactly the resource of the Shansi sedimentary as the lenses are very irregular, but the probable total quantity may be given at 300 million tons. It must be remembered, however, that these are not suitable for modern mining. The reserve of the other deposits altogether amounts also to 300 million tons of which at least half can be worked by modern methods. The present iron industry is still very backward. The total production of pig-iron in 1915 was about 300,000 tons. Of these 136.541 tons are from the Hanyang Iron Works and 29.529 tons from the Sino-Japanese Coal Mining Company at Penshihu. The rest are attributed to the small native furnaces in Shansi, Szechwan, Hunan, Yunnan, etc., Shansi contributing about 50 per cent. The Tayeh mine exported in 1915 298,350 tons to Japan besides supplying the works at Hanyang.

GOLD.

The gold deposits may be divided into 4 classes: (1) recent alluvium, (2) ancient alluvium, (3) tertiary sandstone, (4) quartz veins in Precambrian gneiss and metamorphic rocks. The first is by far the most important, as all the productive mines of Manchuria and Outer Mongolia belong to this class. The four great rivers in Manchuria, the Amur, the Yalu, the Tumen and the Liaoho, drain large areas covered by gneiss and granite whence the gold has been washed down together with other products of erosion into the tributary valleys. All the great gold mines in Heilungkiang province are situated on the right bank of the Amur river, those of Kirin along the tributaries of the Yalu and the Tumen and the mines of Mukden in the basin of Liaoho. In outer Mongolia, they are in the valleys of the Iro, the Shara, and the Kurduri, all of which are tributaries of the Selenga that flows into Baikal. Similar alluvium is found in the Upper Yangtze between Yunnan and Szechwan, in the southern tributaries of the Tarim in Turkestan, and in the small streams in Shantung, Honan and Jehol.

As to the second class we have a unique example of the Wali gold mine on the banks of the Yalung river in Szechwan. The tertiary sandstone known as the Hanhai formation has a wide distribution in Turkestan and Kansu, and in the Kwenlun and the Nanshan it is often auriferous. In Szechwan, Kiangsi, Hunan, Fukien, north Chihli and Shantung the gold-bearing quartz veins in the gneiss and phyllite are often worked in a small way, the famous Maha mine in Szechwan and the Pingkiang mine in Hunan both belong to this class. The alluvium worked in Manchuria contains on the average 1.07 dwt. of gold per ton, whilst quartz veins are not considered workable when the gold content is much less than 6 dwt. per ton.

In 1915 the total production was about 200,000 oz.; 120,000 from Manchuria and 60,000 oz. from Outer Mongolia and the rest from Chihli, Hunan, Shantung, Kansu, Turkestan, Szechwan, Yunnan, Kiangsi and Honan.

COPPER.

The occurrence of copper ore in China is extremely numerous but few have been proved of value. Genetically these deposits can be classified into 5 groups; (1) magnetic segregations, (2) contact deposits, (3) replacement and fissure veins, (4) impregnations, (5) sedimentary deposits. The first group is well seen in the Permian basalt of Yunnan, which covers immense areas—whenever this rock crops out there are sure to be some abandoned mine and heaps of slag which gave the French engineers erroneous impressions of the mining possibilities along the Yunnan-Tonkin Railway. But they are practically without exception very small irregular bodies quite unsuitable for modern working. Similar occurrences are known in the tertiary porphyries of north Chihli. The second group is always more or less associated with the iron ore, being also due to the contact action of the diorites. They are found scattered in south Hupeh in the districts of Shingkuo and Yangshing and may be regarded as of no economic value. The Government mine of Pangshih in Kirin seems to belong to this type; the copper content is usually above 10 per cent. though the resource is somewhat limited The third class is by far the most important, for the famous copper mines in Tungchuanfu in Yunnan are of this character. The ore is of high grade, usually above 8 per cent. and the possible reserve rather large. The stock-works in the limestone are formed by replacement whilst in shaly rocks they are fissure veins. Similar deposits are to be found in Hueili district in Szechwan. The fourth type is exclusively found in Precambrian crystalline rocks of south Shansi, and northwest Hupeh. They are usually of low grade, but the reserve reaches sometimes respectable dimensions. The Government mine of Pengshien near Chengtu (Szechwan) is of the same nature. There the ore bodies are large lenses in the crystalline schists and limestone, the average copper content being about 5 per cent. The last group is of great geological interest. In Yunnan and Kweichow the Lower Triassic sandstone overlying the Permotriassic coal measures always contains some copper, usually in the form of malachite, which used to be extensively worked in Tantang in the district of Hsuanhui, Yunnan. Similar deposits are found in the Hanhai formation in Turkestan, for example, the copper mines near Aksu.

The present production of copper in China is about 2,000 tons, mostly from Yunnan, Kirin, Kansu and Turkestan, the first province supplying about 50 per cent.

TIN.

Tin is at present the most important metal produced in China—the production in 1915 was nearly 8,000 tons—about 6 per cent. of the world's total production. Over 80 per cent. came from Kokiu in Yunnan; the rest from Southern Hunan and Kwangsi. The deposits are invariably connected with granitic intrusions. In the last named region the tin is probably alluvial, but it occurs as lodes in limestone and granite in the districts of Lingwu and Kianghua in south Hunan. In the most

important district of Kokiu, it is a residual deposit; the minute crystals of cassiterite are scattered through the limestone not far from the granite and are usually too poor to be mined. But as the limestone is weathered away, a red residual clay is left in which the tin ore is thus concentrated The lowest workable percentage at present is about 0.1 per cent. of cassiterite.

ANTIMONY.

In antimony China occupies quite a unique position, for since 1908 China has been producing more than 50 per cent. of the world's total production and in 1913 China produced 13,000 tons. that of the whole world 20,000 tons, but in 1915 China's production increased to 20,000 tons. More than 90 per cent. came from Hunan where the metal is widely distributed. The most important centres are in the valley of Tsekiang in the districts of Shinghua, Anhua, Yiyang and Paoching. The mineral is usually stibnite but the oxide occurs also in small quantities. The best known deposit is that of Shikungshan where the ore bed occurs between the quartzite and the upper limestone which are either Lower Carboniferous or Upper Devonian. These beds are folded into anticlines and domes with which the ore seems to have a constant relation. Most of the other Hunan deposits are found in the same horizon, but in Yunnan the Amichow deposit is probably in the Triassic Formation.

ZINC, LEAD AND SILVER.

These three metals are usually associated with one another. Geologically they are of two classes: (1) those in Archean gneiss. (2) in Palæozoic limestone. The former class is chiefly found in north Chihli and north Shansi and is usually small in amount. but rather rich in silver—the richest galena from Jehol contains as much as 100 taels per ton. The second class on the other hand is much more extensive, but the silver content is somewhat smaller, averaging about Tls. 16 per ton. The best known deposit is that of the Government mine of Shuikoushan in Hunan where the mixed ore of galena and zinc blende occurs in large pockets in the limestone. The only other important deposit with a respectable output is that of Kungshan in Tungchwan (Yunnan). Here the principal ores are carbonates. In 1914 6,000 tons of zinc and 5,300 tons of lead were produced in China, most of them from the Shuikoushan Mine. The production was increased by 30 per cent. in 1915. The amount of silver produced was insignificant, probably not more than 50,000 oz.

OTHER MINERALS.

China produced in 1915 456,300 lb. of mercury which came almost exclusively from Kweichow. In the same province there is also a considerable amount of orpiment. Sulphur is made in Shansi, Honan, Hunan and Szechwan partly from pyritiferous shale, partly from the sulphide ores of zinc and lead. Among the rarer metals, cobalt, nickel, tungsten and molybdenum are known to occur in many localities, but the production is still quite unimportant.

PETROLEUM AND SALT.

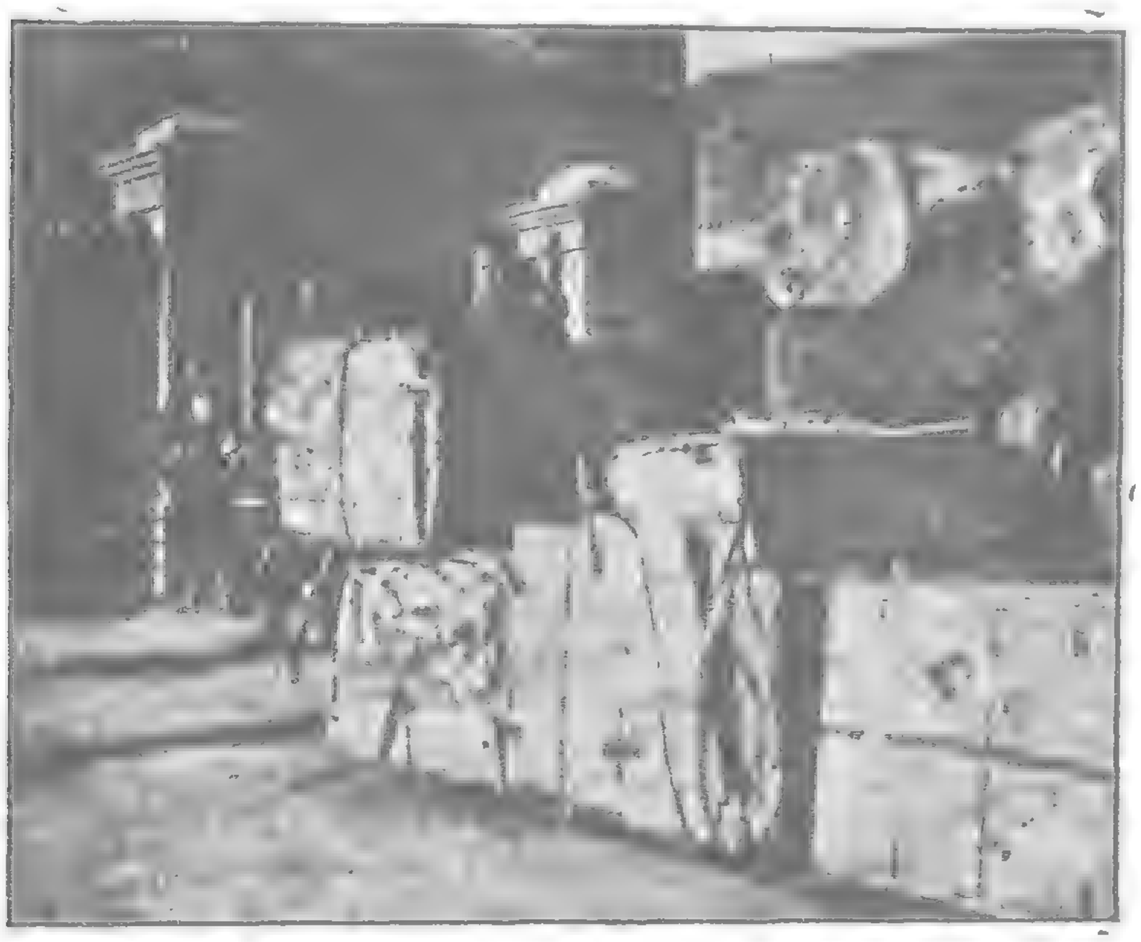
Last we must mention petroleum and salt. The Standard Oil Co. undertaking in Shensi has proved to be a disappointment. but the geological conditions seemed from the outset to be unfavorable as the oil bearing strata are hardly folded at all. The adjacent province of Szechwan may still prove to be a success as there exist many anticlines in the Red Basin where natural gas is known to occur in the salt wells. A more close study of the brines may very probably lead to the discovery of potash salts which are badly needed in China for agricultural purposes. On the whole therefore China cannot be said to be poor in mineral wealth, although the early estimates were much exaggerated. Too much emphasis, however, cannot be given to the fact that China has had a mining industry for centuries and the easily workable outcrops are only exceptionally to be met with, so prospecting requires much scientific study and development work; the poor adventurer who expects to pick up gold nuggets and acquire speculative concessions would find better employment of his time and labour in South Africa or Australia than in China.—Reprinted from FAR EASTERN REVIEW. July, 1917.

For recent figures concerning China's mineral production see article on China's Industries in this issue.

Trade with China: A few Hints to Foreign Manufacturers

By P. CAMPBELL

In the past the British and American importer, or to state it more correctly, the manufacturer and the merchant in these two countries, have failed to realize the possibilities of trade with China or to estimate with any idea of correctness the wonderful natural resources with which this country is endowed. The German and the Japanese on the other hand have not failed to see that in the trade of China there is an asset of great value, and in consequence they have catered to the every want of the Chinese. Nothing has been too small for them to undertake, from needles to machinery, as far as Germany is concerned, and from matches to piecegoods as far as concerns Japan. On the other hand the British and American have determined that in their dealings with Chinese and with China it is the big business that will count and they have catered little for what is termed the muck and truck trade. The muck and truck trade alone, it must be said, is not of sufficient importance to warrant any country dealing in it entirely but it often happens that it is this trade that leads to bigger things. Nor must it be forgotten that it is the muck and truck trade that underlies the whole structure of trade whether internal or foreign. There are many millions in China to whom machinery is not known, but there are also many millions who know how to use a needle. Piece goods supply the needs of the country and so do matches and it is in this direction that Japan has made much headway.



HOW FOREIGN GOODS OFTEN ARRIVE IN CHINA

Japan is one of the few nations that have thoroughly understood the needs of the Chinese. Speaking their language, and the similarity of the written character smoothing over the difficulties of learning, the Japanese have travelled far and wide in China, have studied the people closely and have made considerable headway. Prior to the war Germany was adopting the policy of the Japanese. and it is without fear of contradiction that it is stated that Germany and Japan between them would, had this war not reduced Germany to less than a third rate power, have dominated the Chinese market. This statement may be challenged, but when the activities of Germans in England and the United States be considered in conjunction with this question, when the banking facilities they were able to obtain in London are not overlooked and when the great portion of the piecegoods trade of Manchester was done through Germans, it is quite easy to arrive at the conclusion above. When Japan on the other hand, benefitting as she has done during the four years of the war, has been able, by cheaper and unrestricted tonnage, to ship into China large

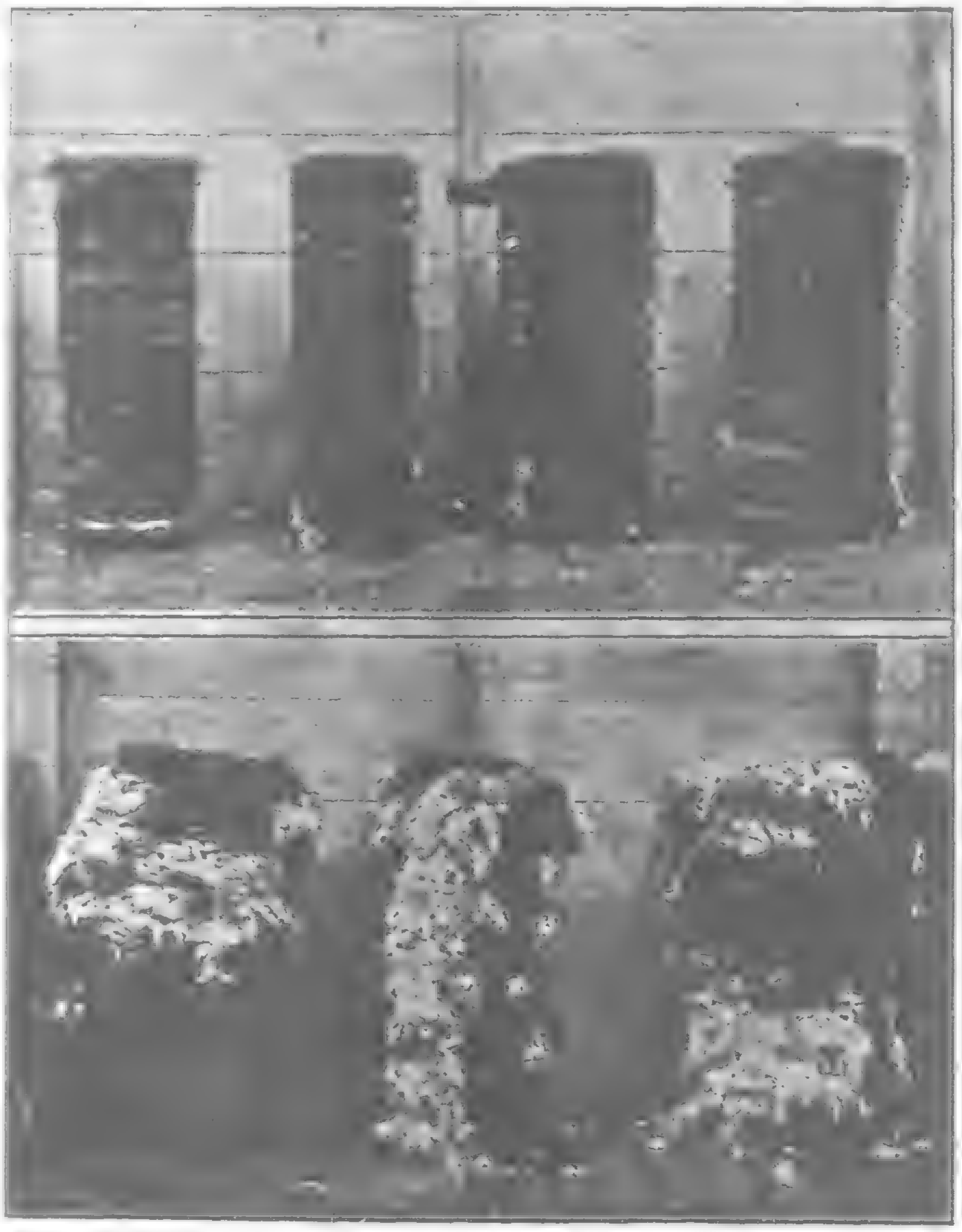
quantities of her manufactured articles the cogency of the statement is all the more exemplified. Nor must it be forgotten that Japan, knowing that the Chinese are not able to afford, as a whole, cloth of good quality and also being unable to manufacture piece goods of the quality that European mills are capable of turning out, made it their business to cater for the market. The result has been that for many years America has been out of the piecegoods market—her imports to-day are negligible—and Great Britain has suffered heavily in the greys. At the same time there is a market for the better quality piecegoods and for fancies which Japan cannot manufacture, and it is here that Great Britain still retains the lead. Japan it must be said is struggling with might and main to manufacture a better class article and she has turned her attention chiefly to poplins, but so far the British article cannot be approached as far as quality is concerned.

Her geographical situation will always help Japan in her trade with China, but there is a feeling that if America and Great Britain will but cater to the needs of this country the trade with Japan will show a considerable falling off. This is accountable by two points which must not be overlooked by importing countries. The one is that Japan is unable to manufacture articles of the best quality, a fact which Australia has found to her cost, and to the Chinese feeling against Japan which so far as has only shown itself in boycott. It is with great heartburnings that Japan is unable to manufacture motor car and aeroplane engines. In the former, America holds the trade in China, chiefly with Shanghai, very few ships arriving from across the Pacific without a cargo of one or more cars. At the present time Japan is chiefly concerning herself with electrical goods and is importing these in large quantities, though here again the quality is not up to European or American standards. In fact there is little in which Japan excels except in those articles the manufacture which are peculiar to her country. But this much must be said, she adopts the right principle in striving to obtain the market although her methods are not always above suspicion. She quotes prices which the Chinese understand; she tells the cost of the goods laid at their door. On the other hand the British quote in pounds, shillings and pence and the Americans in gold dollars. Their catalogues are in the English language with English weights and measures, which very few of the merchants, except they have more than the necessary smattering of English, will ever be able to understand. A case in point is one in which a British house was asked to send a catalogue to a Chinese firm in the interior. The catalogue came, very handsomely got up, the price was half a crown and the quotations and descriptions were all in English. It is not to be wondered at that no business resulted. It therefore follows that either the British or American manufacturer or merchant doing business with this country and depending upon catalogues for his orders will have to print those catalogues in Chinese, illustrate them profusely and quote c.i.f. prices or send a travelling representative. The Chinese want to know the cost of the article at their door and they do not want to be bothered with additional charges. That is the secret of doing successful business with Chinese.

Foreign firms in China will have to alter their methods. Too much has been left to the compradore in the past. The British, and in equal degree the Americans, are coming to understand the value of speaking the language of the people of the country in which their lot is cast, and a very large number of British employes are studying the language, not only the spoken but the written too. If this serves no better purpose than checking the interpretations of the Chinese staff it will have been of immense value. Other firms who send representatives into the interior are now insisting upon their men learning the language and by bonuses and other inducements the men are studying Chinese which is of the utmost value to the firm in whose service they are.

The export trade of China is carried on mostly with Japan, America and with the British Empire, chiefly Hongkong and the Straits, but the United Kingdom does a very large business. Japan takes from this country quite a big amount of raw materials while America in the past has been a big buyer of egg products and hides and skins. Until recently her imports of these two commodities were very large, but a recent decision that egg products were not to contain more than a certain percentage of zinc led to a considerable falling off of imports and serious losses in China. The demands of the American Government in this respect could not be met chiefly because the method of manufacture is against it. Egg yolk is prepared in zinc trays and it is from these that the small percentage is obtained. Other methods have been tried but they have not met with the success hitherto attained. Great Britain on the other hand has been importing in increasing quantities egg yolk and other foodstuffs and she has tapped a market which promises to become a big one if carefully fostered in the near future. In Shantung there are golden opportunities for the frozen meat trade and Great Britain has been importing large quantities of frozen game, etc., since the war commenced. the only other importers being Germany, before the war, in small quantities, and Japan. It entirely rests with the Chinese whether this trade flourishes, and there is no reason why it should not if ordinary sanitary arrangements are undertaken, or ceases to exist. The tendency of China's export trade, apart from her mineral resources when these are properly developed, is to become a big supplier of food.

Before China there is a big trade future. Once she can rid herself of what is known in America as graft, there is no reason why she should not become a great commercial nation. She possessess men of exceptional business ability, her various climates give her great advantages and her waterways tap untold of resources For the foreign merchant there are also great opportunities. China is in a stage of transition; she is demanding machinery, bridges, and many other things which she is at present unable to manufacture, and it is in the construction of this mighty nation that the foreign manufacturer if he be wise and leave behind the conservative methods which carried along his forefathers but which will leave him very much behind, can take a big share and play a big part. China does not look so much to Japan as to Europe and America and now the war has come to a successful issue and Germans here have had their activities curtailed, the opportunity has presented itself to America, to Great Britain and the Allies.



THE STATE IN WHICH COTTON OFTEN ARRIVED IN THE FAR EAST. THE TOP PICTURE SHOWS BOMBAY COTTON—THE BOTTOM AN AMERICAN CONSIGNMENT

The Chinese Market for Machinery

Increasing Industrial Development Causes Brisk Demand for Machines and Tools

The present situation in China as regards machinery is more a question of supply than of demand. China, emerging from internal dissensions economically rejuvenated compared with the destruction of wealth in Europe, has found the usual sources of supply practically closed by the war. With silver worth more than ever known, the people would be anxious and willing to buy were not the same low exchange price in gold for their exports a deterrent. Everywhere abroad the home markets are being considered first; and if ships are found for what is left, it is carefully parceled out. The result of these conditions has been the industrial awakening of China and a determined effort to supply some needs at home with the consequent expansion of Chinese domestic industries. The necessity that has driven the Chinese to look to home manufactures to replace imports no longer available has been the mother of invention in more lines than one, and hardly any field of manufacture has been left untouched or untried. Among the new ventures noted during 1917 are pumping, mining, and printing concerns, flour and rice mills, cotton weaving and silk filatures, oil and paper mills, brick and cement works, candle and soap factories, glassware and porcelain industries, electric lighting and waterworks, chemical manufactories, sugar refineries, and factories for making surgical instruments, heating apparatus, electric light bulbs, bicycles, imitation panama hats, motors, printing presses, needles and nails, clocks, tiles, carpets, canvas, and leatherware. Many other factories have been started in a small way and in every case there is the primary need of machinery.

New Chinese Enterprises Chiefly Cooperative

Due to the lack of capital, the large majority of Chinese enterprises are of a joint nature, the Chinese supplying the working capital and foreign interests supplying the fixed capital in the form of machinery and supplies. It must be pointed out that in a great many instances original installations have been made at a loss with a view to getting the profits out of the venture from accessories, repairs and renewals, as well as from an advertising standpoint, with the advantage of subsequent business elsewhere. As a rule, the Chinese wish to pay for a new installation out of the profits, and the dominant position of German machinery in China before the war was largely due to the fact that they always took part payment and extended the balance over a few years. Moreover, German firms carried small boilers, steam engines, ice-making plants, hand flour and rice mills, oil engines, dynamos, and machine tools in stock, which were installed and payment arranged later.

Private and semi-Public Enterprises Offer Unlimited Field

The sale of machinery is largely dependent upon the mode of financing such private enterprises, for as has been pointed out, the lack of ready capital to cover initial purchases often leads to the machinery supplier being invited to participate in the enterprise. To those desiring to do business in this way, the field is practically unlimited, just as the opportunities are very narrow for any one expecting to do business in these lines as it is commonly transacted in the United States. Happily the extension of adequate American industrial banking facilities is becoming more and more an established fact and will serve as a valuable intermediary to those not desiring actual participation in the enterprises on the machinery for which they wish to bid.

Two Methods of Securing Contracts

There have been two well recognized methods of securing machinery contracts in China in the past. The first method is that of appointing one of the large mercantile houses having branches at all the important Chinese trade centres, as general agents on a fixed agreement for a term of years. This was the system employed by almost all the large German manufacturers and its principal advantage lies in the benefits accruing from an old-established connection on the ground with valuable Chinese connections. In addition to such agency it has been found advisable to send one or more qualified engineers, trained at the home factory, who could use the offices and staff of the agents' branches in China on their trips of inspection and cooperate with the agents' salesmen in obtaining business. The other and less desirable method for those just entering the Chinese field, is to conduct the business direct with the Chinese, and open offices at four or five of the trade centres, with qualified engineers attached, who are competent not only to draw up specifications and quotations on the spot but to carry on negotiations with Chinese officials and purchasers.

There are, of course, any number of variations from these two general methods but as a rule the first method is by far the more desirable for those new to the field, as the peculiar conditions of Chinese trade have nothing in common with conditions in this country or in other foreign countries.

Textile Machinery Imports Largest

The decrease in importation of textile machinery during the past three years in no way denotes a backwardness in that industry. The practical closing of the British market and the increased demand for Japanese machinery at home caused by the unusual expansion of textile industry in Japan, together with the lack of shipping facilities and embargoes in other countries, has done more than anything else to retard imports.

The following table gives the value in Haikwan taels of the imports of textile machinery into China, by countries of origin, during the past three years. (The value of the Haikwan tael in United States currency was $0.62 in 1915, $0.79 in 1916 and $1.03 in 1917):—

Imports from	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.
Great Britain	1,076,229	1,257,961	669,649
Japan	253,490	531,437	322,607
Canada	—	88,249	203,132
Hongkong	64,733	6,822	14,399
United States	15,446	27,182	15,796
Singapore, Straits Settlements	6,929	12,083	9,525
All other countries	2,684	10,407	692
Gross imports	1,419,511	1,934,141	1,235,800
Re-exports	6,669	3,484	19,647
Net imports	1,412,842	1,930,657	1,216,153

The most striking features of this table are the remarkable increase of Canada's share of the textile machinery imported which advance from nothing in 1915 to Tls. 203,132 worth in 1917, and the 50 per cent. decrease of Great Britain's trade.

The importance of this business cannot be estimated from the past results. There were 56 spinning companies in China in 1917 and the total output of these companies has only served to

decrease the importation of cotton goods from 32 per cent. of the total imports in 1915 to 27 per cent. in 1917, showing that the demand for this class of manufactures is growing and it is safe to assume that the growth of the Chinese industries engaged in this business will be co-extensive.

Decreases in Imports of Propelling Machinery

The decrease in imports of boilers, turbines, and other propelling machinery has been practically due to inability to get the goods. This decrease may be noted in the following table, which gives the value (in Haikwan taels) of the propelling machinery imported into China in 1915, 1916, and 1917 by countries of origin:

Imports from	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.
Great Britain	313,016	322,360	165,557
Japan	76,276	34,257	139,983
United States	126,511	130,825	120,619
Russian Pacific Ports	126.821	4,021	41,914
Canada	1,014	3,652	19,921
Hongkong	60,537	17,917	15,838
All other Countries	6,712	93,116	4,426
Gross imports	710.887	606,148	508,258
Re-exports	34,352	29,645	180,730
Net imports	676.525	576,503	327,528

American Agricultural Machinery Salable

The promising field for American agricultural machinery after the war should be China. Just as American machinery was being introduced into this market in 1916, it was necessary to curtail production, and a good part of the business went to Japan in 1917. The imports of agricultural machinery into this country, and the countries from which imported are shown below:

Imports from	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.
Japan	2,441	5,839	51,180
United States	62,294	126,651	26,748
Canada	43,144	37,617	20,071
Russia, Amur Ports	19,197	13,545	9,258
All other countries	34,487	24,255	3,712
Total imports	161,563	207,957	110,969
Re-exports	1,765	3,437	2,779
Net imports	159,798	204,520	108,190

Machinery for Brewing, Distilling, Sugar Refining, etc.

Under this classification is included only a comparatively insignificant total net import to the value of Haikwan Tls. 24.672 in 1915, Tls. 11,517 in 1916, and Tls. 87,322 in 1917. It is interesting to note that Tls. 85,783 worth of this latter amount came from Japan, where sugar-refining machinery is made for home industries The bulk of the trade in 1915 was with Russia, and in 1916 with Great Britain. In 1917 there were 6 sugar refineries (3 Chinese, 2 English, and 1 Russian), 16 breweries (12 Russian, 3 German, and 1 Austrian) and 8 Russian vodka-distilling plants in China

Unclassified Machinery Shows Consistent Gain

Machinery used in all other enterprises showed the largest gains, proving that new industries have opened up during the past three years for which no customs classifications have yet been prepared. In general these machines correspond with the list of new industries already noted.

The value of the imports of other kinds and parts of machinery for the past three years was as follows:

Imports from	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.
Japan	473,273	1,374,775	1,710,965
United States	501,066	709,148	900,520
Great Britain	595,698	749,717	812,342
Hongkong	283,906	136,325	188,302
Canada	191	95,681	108,858
All countries	403,750	416,028	221,954
Total imports	2,257,884	3,481,674	3,942,941
Re-exports	74,287	178,647	418,171
Net imports	2,183,597	3,303,027	3,524,770

Machine Tools furnished by Japan

The total trade in machine tools has increased almost 200 per cent. since 1916, and Japan's share has increased 300 per cent., that country taking not only its own share of the total increase but practically all of the trade of Great Britain and France.

The following are the values of the imports of machine tools into this country during 1915, 1916, and 1917:

Imports from	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.
Japan	42,094	49,740	160,475
United States	15,494	23,133	39,619
Hongkong	414	2,600	4,189
Canada	—	270	1,364
Great Britain	9,052	10,772	1,254
All countries	5,757	11,263	1,493
Total imports	72,811	97,778	208,394
Re-exports	2,629	35,105	32,587
Net imports	70,182	62,673	175,807

Sewing, Embroidering and Knitting Machines in Demand

One of the evidences of increased purchasing power due to rise in price of silver has been the increased demand for sewing, embroidery, and knitting machines. Many small businesses have thereby been instituted to supply the local demand. The trade which Great Britain formerly enjoyed in this line of machines has been taken over almost entirely by the United States.

The value of the imports of sewing, embroidery and knitting machines during 1915, 1916, and 1917 is shown by the following figures:—

Imports from	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.
United States	6,920	25,307	224,051
Japan	27,562	53,246	96,157
Hongkong	140,951	94,360	70,369
Great Britain	52,610	123,644	28,262
Canada	20	179	14,738
All countries	78,190	19,507	12,847
Total imports	306,253	316,243	446,424
Re-exports	18,768	20,937	14,509
Net imports	287,485	295.306	431,915

Demand for Electrical Materials and Fittings

Under this heading are included all accessories and appliances of an electrical nature. The use of these appliances is naturally limited to those cities and districts where electric power is obtainable, and the constant growth of this trade under these circumstances is promising. A great many electric power plants have been unable to get machinery during the past year to take care of natural increase in consumption and new contracts for current have been subsequently refused. With an increased import of appliances under such circumstances we can only infer to what

size the business would have grown under normal conditions. The following figures show the increase in the value of the imports of electrical materials and fittings during the past three years:—

	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls
Japan	845,053	1,699,111	2,563,557
United States	314,403	614,321	908,960
Hongkong	259,585	339,992	381,287
Great Britain	403,851	710,744	379,693
Canada	3,184	73,863	58,941
All other countries	288,339	130,681	85,953
Total imports	2,114,415	3,568,712	4,378,391
Re-exports	71,525	137,141	351,148
Net imports	2,042,890	3,431,571	4,027,243

Japan Dominates Chinese Machinery Market

As has been probably noted from the statistics of different classes of machinery, Japan has taken a more and more dominant position in China's machine trade each year. This is more readily seen from the totals of all classes of machinery imported including machine tools, sewing machines, and electrical equipment by countries as given in the following table:—

Imports from	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.	Per cent. of Increase (+) or Decrease (—)
Japan	1,720,189	3,721,456	5,043,924	(+) 193
United States	1,042,134	1,656,567	2,236,313	(+) 114
Great Britain	2,451,056	3,175,198	2,056,756	(—) 2
Hongkong	810,126	1,211,708	674,384	(—) 2
Canada	56,605	299,511	427,025	(+) 673
All other countries ...	977,988	159,736	490,097	(—) 51
Total gross imports ...	7,068,098	10,224,170	10,918,499	(+) 54
Re-exports	210,107	408,396	1,019,571	
Net imports ...	6,857,991	9,815,774	9,898,928	(+) 44

A Consistent Demand

These figures show a consistent demand for industrial machinery and equipment in China which has been unaffected by scarcity of goods abroad, high prices, or lack of shipping, but, even taking into consideration the increased price of goods as affecting total values, has at least held its own in a time of considerable disturbance. Although Japan has increased its sales to a greater degree than we have, this increase has been mainly in electrical fittings and equipment, supplies which China is rapidly making at home. The growth of Canada's trade in other classes has offset the losses of Great Britain, and Canada bids fair to become a serious competitor in the heavier lines. There should be nothing to prevent the United States not only from holding the advantage obtained, but with increased supplies at home after the war to gain an even greater share of China's machinery business.—*Special Report by U.S. Bureau of Foreign and Domestic Commerce.*

Telegraphy—Wireless and Cables

If wireless telegraphy had been installed in China in the dark days of the Boxer Rising, the fate of the Legations and foreign residents in Peking, so long in doubt, would have been made known earlier to the relief forces, and the gallant band which were prepared to sell their lives dearly, would not have had the horrors of isolation added to the horrors of the siege. Writing almost twenty years later such a statement has lost much of its force. To-day China has many wireless installations, the majority of German make—the Telefunken system—but recently, that is since the war, and as late as August 24th of last year, British and American plants have been laid down. Besides the plant at Nanking others have been installed at Peking, Shanghai, Woosung, Kalgan, Hankow, Hoihow, Shewen, Canton, Samshui, Tsungming and Paoting Other stations, not belonging to China exist at Hongkong, Weihaiwei, Tsingtao, Shanghai, Dairen and Port Arthur, in addition to which private ones have been installed at the American, Japanese and Italian legations in Peking.

The Chinese Minister of Navy in November, 1917, signed a contract with a Dane, the terms of which were published in the April, 1918 issue of the FAR EASTERN REVIEW, for the establishment of a wireless station with sufficient power to connect with European and American Stations, but as the contract was believed to have German connections it was protested against by the Allied Governments and cancelled.

On October 9 last year the Marconi Wireless Company signed a contract with the Chinese Government calling for the erection of three stations in far flung parts of the Republic. Each station will have a capacity 25 KW and will far exceed in power and range of transmission any station in China. They will be erected at Kashgar, Urumchi (Sinkiang) and Lanchowfu (Kansu) and will connect with a smaller station to be erected at Sianfu to act as an auxiliary to the present land line system between these points, thus ensuring reliable and constant communication between distant Kashgar and Peking. Three steel towers, 300 feet in height, will be erected at each of these points and the equipment is especially designed so that the weight of the heaviest piece will not exceed 350 lbs. to overcome the difficulties of overland transportation. Why completed the system, as a purely commercial circuit overland, will exceed in length any in the world. The coast stations in China have a radius of 700 nautical miles by day and 1,300 by night.

The Chinese Government signed a contract with the Marconi Wireless Company Ltd. on August 24th, 1918, for the purchase of 200 wireless telephones for the use of the Chinese army, the telephones to have a radius of forty miles.

As regards telegraphs and cables the first telegraph line in China was constructed in 1873 in connection with the Shanghai-Woosung railway. It was not until Li Hung-chang obtained sanction to construct a land line from Taku to Tientsin that any further development was made, but following this a land line was built in 1881 to connect Tientsin and Shanghai (1,025 miles). A year later a line was laid between Chinkiang and Nanking, and, being immediately successful, was continued to Hankow, connecting with the important ports *en route*. It was in this year that the Chinese Telegraph Administration was established under Government control. In this year also an endeavor was made to connect Hongkong with Canton, but the Government of the Crown Colony would not allow any Chinese cable to be landed, and two years elapsed before the Eastern Extension Telegraph Co. were given permission to lay a cable across the harbor. The development of telegraph lines has been gradual since then.

To-day China is connected with the world by cable and over the country is a network of wire covering an area upwards of 1,900,000 square miles. Lines extend to the Russian frontier at Hunchun, Helampo, Kiachta and Taicheng, and Kashgar: to the Japanese frontier at Wiju; to the Burmese frontier at Bhamo; to the Indo-China frontiers at Moukay, Dongdang and Laokay and Mount Honuna, and as far as the Tibetan Frontier at Batang.

Though accurate figures are not available for the past year it can with safety be said that the length of land lines is approximately 40,000 miles in length, length of aerial lines 55 000 miles, submarine cables 1,000 lines, underground cables 100, telegraph stations number roughly 630. The number of foreign employees is about eight, Chinese 6,000, and operators 3,000

Foreign cable companies operating in China are the Great Northern Telegraph Co., Ltd. (Danish), Eastern Extension, Australasian and China Telegraph Co., Ltd. (British), Commercial Pacific Cable Co. (American) and before the war a German-Dutch company. The Japanese post office at Shanghai has also its own cable to Nagasaki.

Cable tolls to foreign countries vary according to the price of silver or rate of exchange. Telegrams over the Chinese land lines cost nine cents per word within a province and eighteen cents per word to any other province. If the cable lines are used the rates from Shanghai to certain coast ports vary.

China's Industries

By P. Campbell

The pressure of space in this issue precludes an extensive description of China's industries, but an endeavor has been made to outline as shortly and yet as adequately as possible the present industries of China, and to give an idea of the possibilities that are before the country in the development of her rich resources. China is one of the very few countries in the world within whose borders are to be found all the natural resources necessary for the development of industry. Her natural wealth is backed up by a big population; by a race by no means idle, willing to turn its hands to anything, and by reason of cheap labor can cater to the needs of the people as well as prepare for export. But as yet China has not realized the immense opportunity that is knocking at her door. By weakness and apathy, through squeeze and bribery, she is gradually losing what independence she had and other nations are taking a bigger share in the industry of the country. In silk she is losing a hold through the desire of the breeders of cocoons to produce quantity rather than quality; in tea through indifferent methods of production she has allowed the Indian product to supplant hers in foreign markets, despite the fact that China teas are acknowledged the finest in the world; and other industries which originally belonged to her are now in the hands of other nations. Space does not permit of a detailed analysis, each industry being dealt with under its own heading, but the following figures, which are approximately correct, will give some idea of China's industries and the great future which lies before her if only she will attempt to realize her unique opportunities. In China to-day there are innumerable industries which are confined to cottages and which cannot be included under the headings that follow, but the list gives as far as possible the number of factories which can present any claim to the dignity of a factory:—

Aerated Water Manufactories	30	Lard Factory	1
Albumen factories	8	Leather Factories	13
Arsenals	16	Lithographic Stone Factories	2
Asbestos producing Factories	2	Match Factories	16
Breweries	19	Mints	7
Brick and Tile Factories	1	Nail and Needles Factories	1
Candle Wick Factories	1	Oil Mills	42
Canning and Biscuit Factories	12	Paper Mills	18
Cement and Brick Works	15	Printing and Lithographic	56
Chemical Works	3	Railway Works	11
Clock Factories	1	Rice Hulling and Cleaning Mills	8
Clothing Factories	10	Rope Factories	1
Confectionery Manufacturers	4	Saw Mills	21
Cotton Spinning and Weaving Works	111	Silk Filatures	23
Distilleries	9	Slate Factories	1
Docks and Shipbuilding Works	39	Slate Pencil Factories	5
Electric Light Works	21	Smelting Works	12
Flour Mills	58	Soap and Candle Factories	68
Furniture Factories	8	Straw Hat Factories	2
Gas Works	4	Sugar Refineries	7
Glass and Porcelain Works	24	Tea Factories	9
Hemp Factories	2	Tobacco Factories	28
Hoisery Factories	2	Tramways	7
Hydraulic Press Packing Factories	5	Waterworks	22
Ice and Cold Storage	9	Wine Factories	2
Ink Factories	1	Wool Cleaning and Pressing Factories	9
Iron and Steel Works	4	Woollen Factories	7

Included in the above are foreign factories and German factories which will probably close down, if they have not already done so, now that pressure is being brought to bear on China by the powers to repatriate Germans. The solitary lard factory is in Shanghai and three of the leather factories are in the same city. In fact quite a number of the industries are situate in Shanghai and these are as follows:

Oil Mills: seven in Shanghai, including one German and one British.

Paper mills, six in Shanghai.

Silk Filatures: fifteen in Shanghai.

Canning and Biscuit Factories: eight in Shanghai.

Clothing Factories; seven in Shanghai.

Cotton Spinning and Weaving Mills: forty-six in Shanghai.

Of course it must be remembered that many of the above include small factories as well as the large foreign ones.

The number of foreign firms and population in China at the end of 1917 are as follow:—

	Firms	Persons
American	215	5,618
Austrian	18	317
Belgian	18	324
British	655	8,479
Danish	17	450
Dutch	22	298
French	127	2,262*
German	132	2,899
Hungarian	—	18
Italian	42	416
Japanese	2,818	144,492
Norwegian	7	277
Portuguese	51	2,297
Russian	2,914	51,310
Spanish	8	300
Swedish	3	513
Non-Treaty Powers	7	215

*Including 714 proteges.

Silk*

The silk industry of China is the oldest and one of the most important in the country. The silk industry is chiefly pursued in the rich province of Shantung which has been noted since 2600 B.C. for the excellence of this article. It remained for the wife of the Emperor Huang-ti to make the industry popular, and having become of large dimensions it soon surrounded itself with superstition which precluded and included certain practices in the cultivation of the cocoon. The Chinese exercise the greatest care in the cultivation of silk and though they still to a very large extent rely on old-fashioned and primitive methods to produce the article ready for sale, the excellence of their product is equal in quality though not in quantity to the products of steam filatures which have sprung up in the province and in Shanghai, there being about ten in the latter port.



NEAR VIEW OF REELS IN A MODERN FILATURE AT SHANGHAI SHOWING COCOONS BEING UNWOUND AT STRAIGHT EDGE OF SEMI-CIRCULAR BASIN, EACH WOMAN KEEPING CONSTANTLY RUNNING FOUR THREADS EACH MADE UP FROM SIX TO EIGHT COCOONS.

Without entering into a technical description of the mulberry silk worm, from which silk is obtained, it must be stated that it is capable, on reaching maturity, of spinning silk to a length of from eight hundred to considerably over one thousand yards. This raw silk is reelable, and it is this when reeled, that finds its way, after certain treatment, to the markets of the world.

If the cocoon is not allowed to reach maturity and is killed, the silk drawn from it is manufactured into what is known as

*See FAR EASTERN REVIEW, October, 1917, "Silk Production of China"; September, 1917, "China's Raw Silk Industry."

angler's gut. In the ordinary course of events the cocoons, when they have finished spinning their silk are carefully selected, and by dipping them into boiling water life is extinguished and the silk is easily unreeled. Others are carefully placed aside for breeding purposes, great care having to be taken when the moth eats its way through the cocoon, to secure it for the purpose intended. After being mated. the female in the course of from four to six days will lay about five hundred eggs. These are placed on brown paper and Chinese women by placing them in close proximity to the body are able to hatch the silk worms. As soon as these are hatched they are fed on chopped mulberry leaves, and as they develop they are fed on the large mulberry leaf. When they cease to eat they begin to spin their cocoon and after spinning are either consigned to the pot of boiling water or preserved to propagate their species.

That in brief is the method by which the silk is cared for in the beginning, and there are many secrets connected with it which the Chinese even now will not divulge, though the advent of the steam filature has robbed them of many of them or so ignored them as to make them useless against foreign and modern methods. Nevertheless the bulk of the silk industry still remains in the hands of the peasanty who sell their products to Chinese foreign merchants at the coast through their agents in the silk producing areas, and who in turn do their business with the foreigner. There are very few firms who deal direct with the Chinese producer of silk though the proprietors of the silk filatures—that is the foreign filature—buy largely of the cocoons and often have found themselves in difficulties through injudicious buying.

Canton is becoming an increasingly important place in the export and production of silk, and statistics which are quoted below give at a glace the amount of trade done by this important port.

Exported by	Bales 1911-12	Bales 1912-13	Bales 1913-14	Bales 1914-15	Bales 1915-16	Bales 1916-17
British	15.344	19.183	20.286	15.955	12.050	16.808
French	14,954	20,004	24,200	8,725	16,200	26,241
German	3,253	4,109	5,713	1,996	—	—
Japanese	50	761	2,919	4,846	4,902	4,302
Swiss	1,300	770	1,277	1,419	343	888
America	—	520	2,254	6,173	4,044	3,732
Exported to Great Britain and Continent ...	—	32,137	37,980	17,471	13,334	29,388
America	—	13,210	18,669	21,643	24,205	22,583

The year in each case begins on May 1 and ends on April 30. A bale equals 106⅔lb.

In connection with the above it is of great interest to quote from the Board of Trade Journal the following relative to the world's production of silk:

The appended table of statistics which have been supplied by the Lyons Silk Merchants Union shows the estimated world's supply of raw silk for 1916 and definite figures for 1915.

Western Europe	1915 kilogs	1916 kilogs
France	130,000	220,000
Italy	2,880,000	3,612,000
Spain	55,000	90,000
Austria	85,000	85,000
Hungary	65,000	65,000
Levant and Central Asia		
Turkey in Asia		
Broussa and Anatolia	175,000	175,000
Syria and Cyprus	350,000	350,000
Other Provinces	65,000	65,000
Turkey in Europe	30,000	30,000
Balkan States (Bulgaria, Servia and Roumania)	100,000	100,000
Greece, Salonica and Crete	110,000	110,000
Caucasus	125,000	125,000
Turkestan & Central Asia (exports)	50,000	50,000
Persia (exports)	35,000	35,000
Far East		
Exports from Shanghai ..	5,460,000	4,690,000
Exports from Canton	1,845,000	2,425,000
Japan: Exports from Yokohama...	12,005,000	13,350,000
India: Exports from Bengal and Cashmere	87,000	115,000
Indo-China: Exports from Saigon, Haiphong, etc.	13,000	3,000
Grand Total	23,665,000	25,695,000

Kilog=2.2046lb.

Japan it will be seen leads the way in the export of silk. This is due to wise Governmental policy which has taken the development of sericulture seriously and scientifically while the Chinese Government, like everything else it undertakes with regard to industry, has shown little more than a passing interest in this important question. It is true that from time to time the Government has assisted the silk producers with funds to carry out their plans, but beyond that they have taken no more interest in the matter than to be assured of the return of their money with a suitable interest. At various times during the past few years the question of sericulture as it affects China has been considered and the co-operation of foreigners has been sought, offered and accepted, but the results of the improvement in sericulture have not met with the success they deserve. If China is to retain her hold on this trade and not sacrifice it, as she has done many other industries which could have been retained by a little foresight and energy, to Japan, she will have to do more than prepare pedantic discourses for the benefit of silk producers; she will have to establish a ministry of industries in which sericulture will have to take a prominent place, rid the methods of production from the superstition which has hidebound so many efforts to get ahead, and give not only financial, but disinterested assistance to all engaged in this trade. The fact that China is the home of sericulture, the fact that the country is specially adapted to the production of it, and to the fact that it is one of the industries in which nearly every farmhouse in certain districts is interested, should be a sufficient impetus to constructive work. If China, cares to go on as she is doing, it will not be long before Japan is dominating the silk trade of the Far East, and doing it with Chinese cocoons which she imports in huge quantities. If this industry is largely lost to China it will be due entirely to her apathy as in the case of cloisonne ware, the secret of which was originally taken from China to Japan.

In this respect it is of interest to note that in the report of the Maritime Customs for 1916 it is stated that, "It is a disappointing fact that the establishment of silk filatures run on European lines and the consequent increase for the demands for cocoons, leading to competitive buying between the filatures, has during late years brought about a rapid deterioration in the quality of the cocoons produced. The farmer having found that it is no longer necessary to spin silk because his cocoons are eagerly bought by the filatures, where the pupae can be stifled and the cocoons reeled off as convenient and poor cocoons in consequence of competition fetch as good prices as healthy ones, has turned his attention to quantity at the expense of quality and neglected the ancient safeguards against disease. Less care is now taken in selecting healthy cocoons for breeding purposes. And finally, a most important point, worms are given too short a time to spin the full weight so that the cocoons have only about sixty per cent. of their proper quantity of silk."

The Chinese Government has been urged to establish scholarships for the improvement of sericulture, but so far little has been done and, as stated above, speculative buying of cocoons of inferior quality is playing havoc with this important industry, while the Japanese Government by judicious assistance in the improvement of sericulture, despite the fact that Japan is unable to produce the same quality silk as that done by China under old conditions, is making headway.

Tea*

Like the silk industry the tea trade of China has suffered severely, firstly, through lack of up-to-date methods and, secondly, the war has had its effect upon exports, the prohibitions and restrictions imposed by Great Britain and the United States limiting the exports from China. But even before the war the exportation of tea was not what it ought to have been if the Chinese had undertaken proper methods of cultivation. In fact during the years 1915-16 India provided Great Britain with fifty-seven per cent. of the tea consumed in Great Britain, Ceylon thirty per cent. and China only four per cent. In taking these figures, the fact must not be lost sight of that the years were war years and that the restrictions on teas affected China more than India, chiefly because China suffered from lack of tonnage. But the China tea question has been considered for many years, and the Chinese Government has given it attention, having ordered the establishment of tea investigation bureaux at Hankow, Foochow and Shanghai, and has taken steps to improve on the old-fashioned methods of cultivation.

The tea plant, which does come to maturity—that is it is not ready for plucking—until it is three years old, was first mentioned by Emperor Wen-ti, 589-605 B.C., and then it was only known as a medicine for the cure of headache and used also as a vegetable relish. Confucius also mentions the plant but in a very doubtful

*See FAR EASTERN REVIEW, October, 1915, Government measures to Improve China Tea; January, 1918, "Chinese Plan to Modernize the Tea Trade."

way. When the tree is ready for picking, the younger leaves and buds are collected—the younger the leaves the better the quality of the tea, and are first taken from the growing point and then down the stem. Contrary to general belief green tea and black are from the same plant, the only difference being in the process of manufacture. In the preparation of green tea the leaves are first spread out and dried after which they are placed in iron pans which have been well heated on wood fires. Chinese move them quickly about with their hands and when dried they are pressed into balls between the hands of workmen. They are then so pressed by hand on a table as to twist the leaves and at the same time to exude what moisture there remains in them. They are again placed in the pans over a charcoal fire where they are kept in rapid motion by employes and in about an hour they have assumed the green hue. The process is then complete. They are left unpacked for some little time until the green has assumed a deeper hue and then are sent off to the coast ports.

In the preparation of black teas, the process is much the same as in the case of green tea, though before being placed in the pans the leaves are allowed to dry for a considerable time. They are then tossed about until they become soft, throw out an agreeable odor and slightly change color. The next process is exactly the same as in the case of green teas, but after being taken from the pan they are allowed to dry for about three hours. They then undergo the special blackening process which is done by placing the leaves in tubes over charcoal fires leaving them there for five or six minutes, when they are rolled and replaced in the tubes for a second, third or even fourth time until the dark color is fixed. The final stage is to place the leaves in quantity over slow fires, ventilating them by means of the hand until the color is absolute.

The names given to Chinese teas have distinct meanings.

The tea made from the budding leaves is known as Pekoe, tea made from the small leaf is known as "gunpowder" and that from the large leaf "imperial." Many of China's teas are scented by jasmine blossoms which are thrown over them for a few days.

The above is a very brief description of the process of manufacture, which varies in different places, but in tracing the history of tea growing both in China and in India it must not be overlooked that the Indian variety was first introduced from China, and it is merely due to careful cultivation that the industry in India has made such headway. In India and Ceylon the huge estates are well managed and every care and attention is given to the plant, but in China there are no estates. Tea is grown by the farmer chiefly to supply his own needs, the surplus he sells to those who care to buy. The tea is bought by Chinese dealers who in turn sell to the foreigner. There is room for great improvement in this industry and the opening out of estates under capable and expert management would lead to a great revival in the trade. In 1888 to 1892 the annual average export of tea from China was 242,213.000-lbs., as against 105,529,000-lbs. from British India. At that time there was great demand for China tea, and the quality was much better that it is to-day, but India has completely turned the tables. Russia has always been China's biggest customer, with the United States next and the United Kingdom third, but in the United States there is a growing demand for the British grown tea and the China tea is steadily losing ground. This trade forms another example of science and foresight leading to big business while the Chinese, whose country is capable of producing the finest tea in the world are losing their grip of the trade. The following statistics for the year 1917 and also for past years show the position of the China tea trade up to date:—

	Black	Green	Brick	Leaf	Tablet	Dust
1908	685,408	284,085	590,815	—	6,288	9,540
1909	619,632	281,679	584,976	—	9,944	2,212
1910	633,525	296,083	616,540	—	8,787	5,865
1911	734,180	299,237	416,656	—	9,073	3,657
1912	648,544	310,157	506,461	—	8,499	8,039
1913	542,105	277,343	606,020	5,603	9,843	1,195
1914	613,296	266,738	583,883	7,325	12,145	12,412
1915	771,141	306,324	641.318	1,563	30,712	31,295
1916	648,228	298,728	560.185	1,229	26,669	7,594
1917	472,272	196,093	443,636	145	7,917	5,472

Exports to Great Britain and America during 1917 were as follows:—

	Great Britain	America
Black	21,193	78,901
Green	12,377	90,445
Dust	1,384	2,254

The above quantities are in piculs. The trade in brick tea is done chiefly with Russia who during 1917 imported 443,350 piculs, and with Tibet where the bricks form a medium of exchange.

The Vegetable Oils Trade*

The oil trade of China is closely bound to the seed trade and the one cannot be considered without the other. The export of oil from China has steadily been diverted to Japan, through Dalny, and from the former place has been shipped in large quantities to Europe. And as in the case of oil, so in the case of oil bearing seeds which are now being crushed in Japan.

As regards the industry itself, oil crushing in China is not organized. The oil-bearing seeds are crushed chiefly by the farmers who grow them, with the result that these primitive methods are not efficient and oil of a clarity not as pure as is now demanded by the United States, is produced. The farmer pays little attention to the oil. Sediment and color are of secondary importance to him; and it is this quality of oil he sends down to the ports where it is secured by foreign merchants and sent abroad. America has been much more strict on this than any other country, and though it has hampered trade it may eventually result in reforms being carried out. The farmer relies little on the quality of the oil, and he does not take sufficient care of the seed which he has set aside for crushing. Sprouting seeds are used along with those that are otherwise perfect from the oil producing standard, and in other ways there is a complete lack of scientific treatment of the seeds and oil. When it is remembered that there are thousands of these small oil crushing mills in China, each farmer having different ideas on the question of crushing, and each one differing in his method of treatment of seed, it is not to be wondered at that when the oils from these mills come to be added to one another there is an absence of uniformity, and what is of still more importance, there is often a noticeable adulteration by the admixture of an inferior oil with one of better quality. A few oil mills have been erected, as will be seen from the statistics given at the commencement of this article, and from these oil of better quality is being produced, chiefly because better quality seed is used and that modern machinery has made it possible to produce a finer quality oil. But even these mills do not make the oil industry independent of the farmer and until that position has been attained the trade will not be on a satisfactory basis.

Before the war the big oil crushing mills of the Continent purchased heavily of seeds from all over the world and China was also tapped but owing to the war these mills have been doing but little crushing, with the result that Great



PACKING TEA IN THE INTERIOR

* See FAR EASTERN REVIEW, October, 1917 "Oil Seeds and their products."

Britain who imported heavily from the Continent has been compelled to seek other markets, and one of these markets has been China, though as stated above Japan must have been her chief supplier. To-day, however, Great Britain possesses the biggest oil crushing plant in Europe, at Hull, and since its erection she has been growing more and more independent of the China oil, relying more and more on seeds. Nevertheless even that mill was unable to supply all British needs, and the Continental and American markets being practically closed to her, she had to seek oil elsewhere, hence the greater purchases from China.

Oil from the interior of China is transported in huge jars with stout paper covering and on arrival at the ports is placed in casks ready for shipment. The transportation from the interior is done by sampan and by steamer, chiefly the former.

As regards the oil position in Japan the following from the pen of an American Consular official fully bears out what has been written above and in other articles appearing in this issue:

"Although the oil industry in Japan may be considered to be one of the many branches of Japanese trade which have shown marked development since the outbreak of war, this development is not general, the output of most of the vegetable oils produced being less than normal while trade in coconut oil in particular has been expanded tremendously. The export of bean oil and rape seed oil has also developed while the statistics show that the future of the trade in fish oil is full of promise.

"The case of coconut oil is particularly deserving of attention because its enormous development savours rather of accident, being due almost entirely to an increased demand from Russia whose merchants were unable to import copra direct from British Colonies. Japanese merchants, however, found themselves owing to the war and the greater facility with which freights, etc., could be arranged, in a particularly favorable position for doing business.

"The present boom in the oil trade is a very welcome one to Japanese manufactureres, for, before the war the industry was not by any means considered a lucrative one, and it was only the very largest factories which embraced several different branches of oil production that were able to do anything more than keep their heads above the water. To-day there is general optimism among manufacturers who believe that after the war, Japan's export of oils cannot be seriously affected. A remarkable feature of the large business increase in Japan's export of vegetable and other oils is that this increase has taken place in spite of the disappearance from the market of Germany, who, before the war, imported Japanese oil in large quantities."

Japan, by reason of her strengthened position in the oil trade, has developed her soap industry until to-day China is flooded with Japanese soaps, and the help which the Government gives to oil merchants—duty on raw materials being removed and on raw materials if the oil is for export—justifies them in the belief in the future of the trade, for they are now aiming at the production of a refined oil instead of the semi-crude oil which they now export.

It will be seen from the foregoing that Japan's development of the oil trade has been done, firstly through the war and secondly her geographical position giving her easy access to China's abundant raw materials, and thirdly to Government assistance.

The following figures show Japan's trade in oils with China for the past three years and also for 1918 as far as the figures are available:—

	Wood Oil.		Other Oils.		Essential Oils.	
	Quantity	Value Hk. Tls.	Quantity	Value Hk. Tls.	Quantity	Value Hk. Tls.
1915 ...	5,376	50,915	28,169	122,345	942	16,117
1916 ...	28,166	294,620	49,383	331,714	3,206	76,814
1917 ...	927	10,659	36,244	249,653	2,529	36,299
1918 ...	10,446	—	28,030 85,839	—		

The following figures shows China's oil trade with the world:

	Wood Oil.		Other Oils.		Essential Oils.	
	Quantity	Value Hk. Tls.	Quantity	Value Hk. Tls.	Quantity	Value Hk. Tls.
1915 ...	310,344	3,012,343	36,791	201,498	7,877	959,507
1916 ...	515,173	5,511,418	74,252	543,514	9,431	878,840
1917 ...	401,361	4,835,903	57,513	470,888	10,009	847,040

The quantities are in piculs, except in the case of 85,839 which is in gallons. The figures for 1918 are for the first ten months only.

Seeds and Beans, etc.

China's trade in seeds and beans is increasing. Since the war commenced greater demands have been made by foreign countries for her products, despite the lack of tonnage, but the chief trade has been with Japan, as explained above, for the purposes of oil production. But when these beans, seeds, groundnuts, etc., are known to be for export, the farmer in the interior is not as careful as he might be, and anxious to turn over a few extra dollars is not above resorting to adulteration. Efforts have been made by foreigners and by Chinese to prevent adulteration, which though known, is difficult to stop as it would mean the opening of every sack of beans, etc. But recently foreignres and Chinese have been working closer together, particularly in Shanghai, and combined efforts are being made to put an end to adulteration which eventually must hurt the trade of China.

The soy (or soya) bean is the chief item in China's trade in beans and seeds. There are ten varieties of the soya bean which are used in many ways. They are employed to make a sauce known as soy, as a paste, as a bean curd, they are also ground to make flour, are used in soups and are eaten as table vegetables. The Japanese use them in confectionery. Bean refuse is used as a fertilizer and for fattening pigs. The bean contains eighteen per cent. of oil which is used as a lubricant and as a substitute for lard in cookery. Beancake is used in the manufacture of margarine, and the beans when roasted form a substitute for coffee while the Japanese make from them a "vegetable milk." Sesamum seed, obtained from the herb sesame, which is cultivated in Honan as well as in Manchuria and on the Hupeh-Szechuan border, forms, after treatment, a substitute for olive oil and is also used as a medicine. Groundnuts are being produced in increasing quantities. They are rich in oil, containing forty-six per cent., and when extracted this oil is used as a lubricant or for various forms of table necessities. Linseed and its oil forms a big trade with Japan. The oil is employed in the manufacture of linoleum in oil paints and in the manufacture of varnishes and printers' ink. Linseed is the seed of common flax. Rape seed oil is used for lubricating machinery and the residue of the seed is an excellent food for cattle.

The following figures show the trade in seeds done with China:—

	1915		1916		1917	
	Quantity.	Values. Hk. Tls.	Quantity.	Values. Hk. Tls.	Quantity.	Values. Hk. Tls.
Apricot Almonds	56,333	879,992	33,407	550,909	18,295	279,340
Cotton	566,111	661,414	373,046	414,858	370,380	459,282
Lily Flower ...	11,620	140,803	10,256	128,511	7,703	120,589
Linseed	152,973	438,915	262,499	622,253	139,888	428,458
Melon	63,723	492,935	69,810	559,955	42,428	363,122
Rape	1,091,630	3,382,087	623,934	2,007,595	430,694	1,590,833
Sesamum ...	2,298,208	9,555,965	1,558,100	6,997,751	223,200	1,100,536
Other kinds ...	330,091	897,279	347,552	1,021,163	491,702	1,404,422

Oils and seeds, except lubricating oil, are sold by the picul which is equal to 133 pounds.

Hides and Skins

The hide and skin trade of China and the fur trade with which it is more or less closely associated, is one which is growing in China, and like many other industries, with careful handling ought to grow very quickly and to large dimensions. The war has been responsible for the reduction in the exportation of the smaller kinds of skins, but the business in hides (cow and buffalo), goatskins and sheepskins, lambskins and kidskins, chiefly the first four, has been maintained as well as possible after making allowance for the hindrances made by restricted tonnage. Great Britain, America and France have been the greatest importers of these articles from China, with Japan following. Hides are used in Great Britain for the manufacture of sole leather, machine belting, saddling and harness and travelling bags, from heavy hides; and for the uppers of army boots and for light boots for civilian wear from light hides; and goatskins and sheepskins have been used for the lightest footwear, gloves, fancy goods, purses and upholstery and innumerable uses to which flexible leather can be put.

There are not many tanneries in China and the hides which leave this country have only been temporarily treated; the same may be said of goatskins which are exported in large quantities under the heading of "Goatskins tanned." Why, in pre-war years the hide and skin trade of China was not favorably looked upon by countries demanding the best quality of goods was because it had been the practice of foreign exporting houses to leave the sorting and selection of hides and skins to Chinese. The result was that a very mixed quality was often sent abroad with a consequent decline in business. The skin and fur trade is one that demands expert attention and unless this is given, China cannot hope to take that part in the world's trade which the wealth of the country in animal life demands. Among the skins exported are those of mink, otter, tiger, leopard, racoon foxtails, rabbit-skins, rabbit skin crosses, dog-skin mats, and cat skins.

In the Customs Daily Returns these are given under their several headings, but in the following figures they are given as a whole:—

TOTAL EXPORTS FOR 1916 AND 1917.

	1916		1917	
Skins & Hides (Undressed)	Quantity.	Value. Hk. Tls.	Quantity.	Value. Hk. Tls.
Buffalo and cow (piculs)...	465,461	17,581,462	477,099	17,367,572
Goat Untanned (pieces) ...	9,888,271	5,466,044	11,735,579	7,898,186
Horse, Ass, Mule (piculs)	25,957	541,254	30,757	703,832
Sheep (pieces)	1,198,253	495,962	1,721,823	966,586
Unclassed (value only) ...	—	28,852	—	72,112
Skins (Dressed) :—				
Goat Tanned (pieces) ...	494,771	485,729	425,291	431,547
Kid (pieces)	17,699	7,287	20,457	4,541
Lamb (pieces)	238,395	269,043	173,941	193,027
Unclassed (pieces)	9,651	3,066	2,227	834
Skins (Dressed) made up :—				
Dog Clothing, Mats and Rugs (pieces)	805,855	690,940	389,275	355,281
Goat Clothing (pieces) ..	1,815	3,660	536	1,062
Goat, Mats & Rugs (pieces)	161,227	209,315	70,818	90,848
Kid Clothing (pieces) ...	114,949	146,525	46,018	55,371
Lamb Clothing (pieces) ...	53,252	235,683	48,067	129,254
Sheep Clothing, Mats and Rugs (pieces)	27,029	42,954	31,887	42,763
Unclassed (pieces)	72,041	111,313	16,864	17,393
Skins, Furs (Dressed and Undressed) :—				
Fox (pieces)	26,167	268,344	13,093	80,579
Marmot (pieces)	693,313	125,230	272,628	63,620
Racoon (pieces)	61,582	42,945	79,688	50,862
Sable (pieces)	542	7,425	—	—
Weasel (pieces)	486,871	91,948	627,748	128,404
Tails of all kinds (value only)	—	83,628	—	32,557
Unclassed (pieces)	1,525,178	472,406	1,894,467	571,701

Hemp, Jute and Ramie†

These three articles form part of China's smaller export trade, and the quantities exported are not very great. The hemp produced in China is of good quality and is used in the making of coarse cloth and cordage. Great Britain chiefly imported the hemp she required from Germany and Russia before the war, but since hostilities broke out in Europe she has bought in the China market. Manila hemp is of better quality and is exported largely to the United States. Jute is a fibre obtained from the inner bark of two plants of the lime tree species. It is used in the manufacture of coarse cloth, cordage and carpets, the main seat of manufacture in Great Britain being Dundee. Shoes with hemp soles have been manufactured in increasing quantities in Great Britain and these have proved very durable. Almost all Great Britain's importations of jute came from Bengal but quite a lot of jute yarn was received from France and Belgium. The following figures show China's trade for 1916 and 1917:—

	1916		1917	
	Quantity.	Value. Hk. Tls.	Quantity.	Value. Hk. Tls.
Hemp	143,799	1,699,371	148,691	1,645,286
Jute	101,390	493,970	85,045	451,935
Ramie	210,931	2,821,208	276,931	3,582,409

Egg Products, Fresh Eggs, etc.**

During the past few years the egg product industry of China has made considerable headway, and up to about twelve months ago the trade with America had assumed very large dimensions. Despite the war the importation of egg products had not been restricted either into Great Britain or the United States and both countries were making big demands upon China. The attitude of the United States, however, in demanding that the percentage of zinc to be found in egg products should not exceed one-tenth of one per cent., placed a barrier between the trade in this commodity with China and the United States and the exports have shown a considerable falling off. Owing to the method of manufacture it is impossible to guarantee so low a percentage of zinc, the yolk being poured on to zinc trays during the process of preparation. Other methods have been tried; porcelain has been used but for some reason the product is not of the same quality as under the old system. If the old system has to be abandoned it will mean the reorganization of the whole industry and will result in a serious loss to the manufacturers.

Egg yolk is used chiefly in the manufacture of foodstuffs, particularly confectionery, and for this purpose it is used extensively in Great Britain. To preserve the yolk two per cent. of boric acid is employed and this has been found sufficient for the purpose of preservation. The quality insisted upon by London is that the yolk shall run on arrival and the time specified is four months from date of bill of lading. This has been altered several times owing to the war making it impossible for shippers to guarantee arrival within the specified period, but the four months period is the one which Shanghai merchants insist shall be regarded. The yolk on arrival must be of fresh merchantable quality and must not contain more than 52 per cent. of water.

Japan recently has been interesting herself in this trade, but she does her chief trade in fresh eggs which she ships over to Japan in millions each month. America is also doing an increasing trade in fresh eggs but Great Britain is doing more in egg yolk. Owing to the lack of cold storage on many of the ships which leave for foreign shores, the trade in egg products and in preserved eggs is not as large as it otherwise might be. Egg yolk on arrival at Shanghai from the interior is recasked and made ready for shipping.

As regards fresh eggs, the Japanese are securing the trade and have contracts with the farmers in many places to supply eggs. This applies to the district around Shanghai. Eggs can be purchased retail at the farm houses for from one to two cents each, which in normal times and reckoning $16 to the £, is about two-fifths of a penny. By the action of the Japanese and other enterprising American and Continental firms, the price of eggs is steadily rising.

The eggs are carefully graded according to size and as far as possible as to quality and are carefully packed in crates for shipment abroad. The following are export figures:—

	1916		1917	
	Quantity	Value. Hk. Tls.	Quantity.	Value. Hk. Tls
Egg Albumen Yolk (piculs)	228,346	7,702,403	405,019	11,999,684
Eggs, Fresh and Preserved (mille)	354,011	2,970,837	247,400	1,870,297
Eggs, Frozen (piculs)... ...	181,123	1,658,237	35,671	448,089

China, a Supplier of Food

In this vast land where almost every inch of available land is under cultivation, where there is room for the development of forestry, the question often presents itself: Is China able to become a source of food supply for foreign lands? Rice, here, is the staple food, helped out by pork and other dainties which are peculiar to the Chinese themselves, but over the seas the demand may come for foodstuffs which China is capable of supplying and which, providing modern methods are used, ought to develop into a vast business. America has supplied wheat to Great Britain, so has Canada; Japan and Great Britain have called upon eggs and egg products in no small quantities; and other countries have bought elsewhere things they could not produce themselves or not in sufficient quantities. China is so fortunately situated, enjoying great varieties of climate, that she is able to produce foodstuffs and other produce of all descriptions. In cattle she is able to conduct a good trade with Russia, a trade which commenced in 1900 when the Russian garrisons at Vladivostok and Port Arthur and the Japanese bought up large stocks; the Philippine Government in 1916 concluded a beef contract with Shantung, and yearly large quantities of cattle are sent to Japan. This is one instance in which China could build up a very large trade with the outside world, especially after the war. New Zealand does a big trade in frozen mutton; there seems no reason why China should not make a bid for the frozen meat trade. She could also raise sheep in much larger quantities than she does; the poultry trade could be enlarged. Wheat, beans, fish, in fact, as it was recently put by the Canadian Department of Trade and Commerce, China, without any inconvenience, might take an enviable part in the world's food trade. This, of course, is looking ahead, but with the aid of a sound and patriotic government, anxious for the welfare of the country, assisting as far as possible the industries, China should become a big trade centre. Modern methods would have to be adopted; rigid sanitary inspection in the case of foodstuffs, would have to be made, and care taken against any form of adulteration. Without digressing, other industries could be fostered, backed by the unlimited natural wealth of the country.

†See FAR EASTERN REVIEW, October, 1917. Ramie Fibre, and Fibres.

**See FAR EASTERN REVIEW, October, 1917. Eggs and Feathers.

Canned Goods Industry

In view of the foregoing it may be of interest to our readers to know that the canning industry first made its appearance in China about 20 years ago when a factory was established at Chinkiang. Lack of experience was responsible for it closing its doors. Since then several have been started elsewhere, the largest, the Tai Foong Company at Shanghai, doing business not only in China but abroad. This kind of business is one in which particular attention has to be paid to sanitation and cleanliness in the preparation of food. Any incident likely to cause a scare would mean the ruin of any concern, and, like the outcry against the Chicago meat packers many years ago, would severely injure trade. In many respects Chinese, and we say it with the best of intentions, not realizing to the full the danger of disease carrying germs, are not always too careful in the preparation of foods. Yet there is a great opening before the country, in this direction, especially as the country is so full of live stock, vegetables and fruits on which the manufacturers can draw at prices much lower than can be obtained in many countries. The experience of the Tai Foong Company, whose success is steadily increasing, is an example of what business acumen, combined with scrupulous care in the preparation of food can do.

Exports in 1916 and 1917 were as follow:—

	1916 Quantity.	1916 Value. Hk. Tls.	1917 Quantity.	1917 Value. Hk. Tls.
Meats:— Fresh, or Frozen (Beef, Mutton, Pork, etc.) (piculs)	305,714	2,580,608	395,521	2,984,084
Meats (prepared or preserved, including preserved game and poultry, but not hams or lard (piculs) ...	40,988	844,656	72,754	1,168,364
Poultry and Game. Fresh or Frozen (piculs)... ...	35,950	331,712	54,619	574,885

The Cotton Industry*

China ranks third in the cotton producing countries of the world. The average American yield of American cotton is roughly about 13,000,000 bales. India comes next with 7,000,000 and China third with 2,000,000. Unlike the American cotton the China article is of short fibre and not so hardy as the American, but nevertheless it is a good cotton and is largely used in the cotton mills of China The absence of American cotton during the past two years, has driven the mills to use solely China cotton. The plant grows chiefly in Chekiang, Honan and Hupeh, but fields of it can be found not two miles from Shanghai. If the Chinese farmer would but give greater attention to the production of cotton he would get a much better and healthier crop than at present, but the Chinese seldom give their land rest, the seeds of a second crop of produce often being sown before the first is gathered in. Cotton, therefore, suffers from lack of the rest which ought to be given to the land and from the fertilizers which give it strength. With the object of improving the quality of cotton in China, an experiment was made just outside Shanghai. The land was allowed to lie fallow for a period, it was then drained and ditched and everything was done to give the plant a chance to produce its best crop. The resultant crop certainly was better than much of the cotton that is grown in China but it was evident from this and other experiments that the best policy to pursue would be to try to improve the Chinese cotton rather than to introduce the seeds of the American cotton. The Chinese Government has taken the matter in hand and has offered monetary rewards for its study while the Commercial and Industrial Commission which was formed in 1915 is making systematic attempts to improve the yield and has established three experimental farms at Chengtinghsien in Chihli, Nantungchou in Kiangsu and Tungchiangchou in Hupeh. To-day China is making goods from the cotton plant that before the war were imported from Germany; and Japan, particularly Osaka, is doing much the same with Chinese cotton. Yet it is a strange commentary upon the condition of the cotton market in China that both from Japan and India a large quantity of cotton yarn is imported yearly. If China; and it is the old, old story of apathy, will but rouse herself to a realization of the present situation, she will find that the cotton industry is open to almost limitless possibilities. The export of cotton from China is practically nil, but there should be no reason why it should not become an article of export in the future. Of course, the one great drawback is the absence of organized cotton growing, the cotton being cultivated by the farmer who uses what he can himself, and that is usually the best, sells the remainder to the villages around where it is spun and woven in the cottages, and the rest finds its way to the big cotton mills along the coast. The cotton that reaches these mills is usually the worst, the farmer and the villages having had the pick. If cotton could be grown on an organized plan, it would be to the benefit of this country.



Photo: H. Crowther

DIFFERENT METHODS OF BALING COTTON.

The two parcels on top and the bale on the right marked Shansi are Chinese. The top one is composed of two bags, used for short distances; the second one is of coarse cotton cloth for longer hauls, and the Shansi bale is on modern lines.



COOLIE CARRYING COTTON FROM PINGHSING IN SHENSI TO CHENGTU IN SZECHUAN —A DISTANCE OF ABOUT 1,000 MILES

Feather Industry

Millions of ducks are killed annually for the benefit of the feather industry. Before the war Germany was the chief importer of feathers purchasing from South China alone roughly 20,000 bales against England's 15,000. The downy part of the feather is used in the making of feather beds, the quills go to toothpick makers and the selected tail and wing feathers to those interested in ornamental businesses in Europe and America In addition to this trade a very large business is done in China alone in salted and sun-dried duck. Ducks are bred in thousands by farmers in the country and journeys along the creeks will reveal thousands of ducks being cared for by one or two Chinese. These are being reared for the feather trade.

Exports in 1916 and 1917 were as follows:—

	1916 Quantity.	1916 Value. Hk. Tls.	1917 Quantity.	1917 Value. Hk. Tls.
Feathers, Duck Fowl, etc. (piculs)	50,686	772,529	53,125	803,508
Feathers, Ornamental (Value only)	—	17,288	—	10,289

* See FAR EASTERN REVIEW, December, 1917, "China's Cotton Products"; May, 1918, "Insects affecting China's Cotton plant.



Photo: The Kodak Shop, Tientsin

MADAM GOES ASHOPPING

Wool

Wool is an important article of export from China, but in China, unlike Australia, Italy or Spain, where it is entirely derived from sheep, the wool is obtained from sheep and camels which provide the best qualities; an inferior kind is obtained from goats. Camel's wool is entirely obtained from Mongolia; the camels are kept solely for their wool, they are not worked, and shed their fleeces in spring. Much of this wool, which is particularly soft and is used in the manufacture of underclothing. is usually divided into three qualities. The first is for underclothing, the second is used in the adulteration of the finest quality, and the third in the manufacture of machinery belting. A very inferior wool is obtainable from the working camel. Sheep's wool is also obtained from Mongolia but the best comes from the Kokonor region and from Tibet. In the manufacture of wool there are no up-to-date methods and when brought from the Mongols camel's wool is in hard twisted ropes of about one inch in diameter. It is later twisted into loose hanks of about five inches in diameter and then made into bales. The sheep from which the wool is obtained in China is known as the broad-tailed variety and unlike the Merino which supplies a fine quality of wool, it is not at all scientifically cared for. In olden days the Merino sheep was covered with a warm coat which was periodically taken off, when the wool was carefully combed and oiled. The China sheep is allowed to wander as it will and little if any care is taken of it. Shearing in this country is far from scientific. Old-fashioned methods are employed. Sheep are sheared about twice a year, the second crop being of comparatively poor quality. There is much room for the improvement of this industry which has possibilities of developing into a very big one. The following are the export figures for the past three years:

	1915 Hk. Tls.	1916 Hk. Tls.	1917 Hk. Tls.
Camels	954,554	1,070,827	1,298,002
Goats	313,263	425,177	469,430
Sheeps	11,128,654	10,698,661	10,533,020

Great Britain was the greatest importer of camels' wool during these years with America second in 1915 and 1916, and Japanese third. In 1917 Japan was second and America third.

Great Britain also purchased the greater portion of goat's wool, with Japan second and America fifth.

America, however, did a much bigger business in sheep's wool than any other country, Japan being second and Great Britain third.

Human Hair—Pig Bristles

Mr. Julean Arnold, the U. S. Commercial Attaché, reports as follows with regard to human hair and pig bristles: The exports of human hair from China have averaged about 3,000,000 pounds a year for the last 10 years. With the revolution in 1911, the cutting of queues was very general throughout the south and many men in the north parted with theirs, although the majority of the male population north of the Yangtze still wear their queues. The supplies of hair are augmented from the combings of the women, from barber-shop cuttings, and from women who in times of stress dispose of their hair. It is exported under three grades—(1) solid dressed clubbed lengths, (2) stumps, and (3) combings. The first grade is dressed in solid lengths of from 8 to 36 inches with 2 inches difference between each length. The second grade consists of short hair under 15 inches, also in small bundles. The third takes short, tangled hair, and combings. Before being shipped to the United States all hair must be officially disinfected. Consul General Anderson reports that the Hongkong exporters require that the hair be sold in assortments, usually consisting of 135, 50, 35, 25, ant 10 pounds of the various grades, so that dealers may not have left on their hands certain grades for which there is no demand in the market to which the other grades are shipped.

Hair nets were first made in Shantung under German supervision. Large quantities of the hair exported from China are sent back to Shantung, after treatment and preparation, for making the delicate hair nets used by women to keep their hair in place. Labor is cheap and plentiful in Shantung and has become very adept at making these nets. The hair, before being shipped to Chefoo, is bleached with peroxide thinned with acid and is boiled in dye, giving a hair softer and of finer texture than the coarse product originally shipped from China. The Chinese in Chefoo are importing the peroxide and preparing the hair directly for the making of the nets, but the resulting nets are of a poor quality as yet. There are indications, however, that the Chinese-dyed hair will improve and soon become satisfactory to the trade. The nets are made up of different colors. This trade has developed to such an extent in Shantung as to amount to upward of a million dollars gold and to involve the employment of more than 100,000 people. Most of these nets are now shipped to the United States.

According to Consul General Sammons, at Shanghai, the hair of certain animals, such as the goat and the yak, is mixed by the manufacturers with the human hair. It is stated that for this purpose the yak's tail is valuable because of its length and whiteness, and when mixed with other shades it produces the desired silvery effect. Tientsin exported 330,000 pounds of goat's hair during the year 1917. Six hundred tons of horse hair (manes and tails) from Tientsin and Dairen and 400 tons of other animals' hair were exported from China during 1917. The uncleaned refuse of pigs' bristles, constitutes a substantial article of export under the name "hogs' hair." It is used in the upholstery trade. It is disinfected by steam before shipment to the United States and is press-packed in bales, four to the ton. Consul General Sammons states that Shanghai can supply each season between 2,000 and 3,000 tons, and Hankow and other Yangtze ports can furnish considerable quantities.

Pigs are raised everywhere in China, and pigs' bristles have become an important article of export, amounting to 4,000 tons a year, valued at about $6,000,000. Bristles that are long, thick, stiff, bright, wiry, and clean command the best prices. The white are preferred. Each hog yields about 1⅓ pounds of bristles. The yield of each hog is tied in a bundle, placed in water for a few days, then scraped off, combed to remove impurities, sun-dried, steamed, and then sorted into bundles about 1½ inches in diameter, with bristles of uniform length. Most of the work of cleaning and tying the bristles is done by women, who receive about 5 or 6 cents a day. Buyers are very particular about the bristles being well cleaned, of uniform length and color, and the bundles solid. This is apparent when it is considered that prices vary from 20 taels to



CAMELS ARRIVING AT PEKING WITH FARM PRODUCTS

300 taels per picul (133⅓ pounds) depending on the assortments. The collecting season is from November to April, as bristles are soft and useless for the trade during the hot months. This accounts for the fact that the main producing and shipping centres are north of the Yangtze. For export the bristles are packed in boxes containing 1 picul to a box. The ports from which they are shipped are, in the order of their importance, Tientsin, Chungking, and Hankow. Manchuria and Shantung are increasing in importance in this trade. Most of the bristles are shipped to the United States, Great Britain, and France. China offers an excellent field for the manufacture of brushes. It is surprising that greater developments in this direction have not taken place.

Recent Production of China Mines

Mining in general is dealt with in a previous article. The following facts are extracted from a report by Mr. Julean Arnold, U. S. Commercial Attaché, on Chinese Products of interest to Americans:

ANTIMONY.—Since the outbreak of the war large quantities of antimony have gone from China for the manufacture of munitions. China at present supplies the greater part of the world's demand. Antimony is produced in Hunan, Kwangtung, and Southwestern China, 95 per cent. coming from Hunan, which possesses the purest ores, practically free from arsenic and carrying from 20 to 64 per cent. of antimony. Smelting is done at Changsha, Hankow and Wuchang. The Wah Chang Co. (Chinese) owns the French patent rights for Hunan for the Herrenschmidt process for the treatment of low-grade sulphide ores and also has a Chinese Government monopoly for a limited term of years for producing regulus in Hunan Province. Antimony crude (concentrated antimony sulphide containing between 65 and 70 per cent. of antimony metal) is the usual form in which antimony is marketed in China. The regulas assays at 98 to 98.8 per cent. pure. In 1917 China exported 15,000 long tons of regulus, 20,000 tons of crude, and 4,000 tons of ore. The ports of export are Hankow, Shanghai, and Hongkong. The regulus is shipped in boxes, 13¼ pounds to a box.



Photo: The Kodak Shop, Tientsin

CARRYING PRODUCE OVER THE ICE ON A PRIMITIVE SLED

COAL.—The estimate for 1918 can probably be placed at 20,000,000 tons. The mines worked according to modern methods produce half this amount. The Fushun mines in Manchuria in 1918 were producing 8,000 tons a day. The Kailan Mining Co., in the Kaiping District, Chihli, has an average daily output of 14,500 tons of bituminous coal. During 1917 it shipped from Chinwangtao 1,442,000 tons, half of which went abroad. The Pinghsiang collieries in Hunan have a daily output of 3,000 tons of semi-anthracite coal and one-half this amount of coke. These are the only large coal mines in China not dependent upon railway transportation. Modern transportation facilities and more workable mining laws are two factors necessary to the development of China's vast stores of coal.

GOLD.—U. S. Consul General Moser, stationed at Harbin, reports that $3,000,000 worth of gold is exported annually from gold mines of Northern Manchuria, which are only partially worked.

IRON ORE.—Dr. H. Foster Bain, assistant director of the United States Bureau of Mines, who spent some time in China investigating its mineral resources, estimates that China has 400,000,000 tons of iron ore available and suitable for modern furnace reaction and an additional 300,000,000 tons that might be treated by native methods. The iron-ore deposits are now controlled by Chinese or Japanese interests, the Chinese Government aiming to control those that are not already mortgaged to Japanese interests. The Penchihu furnaces produced in 1918 about 75,000 tons of pig iron. The Anshanchan Iron Works in Manchuria, operated by the South Manchuria Railway Company, have an annual output of 150,000 tons. The Hanyehping furnaces are probably producing an equal amount, which will be increased when the company's furnaces are in operation at Tayeh. Thus, a fair estimate of China's production of pig iron (1918) would seem to be about 500,000 tons a year, including the output of numerous crude native furnaces, about 50 per cent. of which are said to be in Shansi. The Hanyehping Co. took out, in 1917, 540,000 tons of iron ore. During 1917 China exported to Japan 170,000 tons of pig iron, valued at Tls. 5,300,000, and 303,500 tons of iron ore, valued at Tls. 1,000,000.

LEAD-ZINC.—The principal lead mine in China is the Shuikoushan, in Hunan, owned by the provincial government. The official records of the output of this mine over a period of 20 years show that it produced 50,000 tons of lead and 126,000 tons of zinc concentrates. It employs 5,000 laborers, who receive from 12 to 30 cents Mexican per day. The Kungshan mine in Tungchwan, Yunnan, is the only other large lead mine in operation in China. In the FAR EASTERN REVIEW for December, 1917, there is an article on "The Shuikoushan Zinc and Lead Mine," and in the October, 1916, number there is one entitled "The Shuikoushan Lead Mine in Hunan." China exported about 100 tons of lead in 1917.

The war has affected adversely the zinc trade of China, because of high freight rates and unfavorable silver exchange. The exports of zinc spelter dropped from 38,000 piculs (1 picul=133⅓ pounds) in 1915 to 7,000 piculs in 1917, and of zinc ore from 140,000 piculs in 1915 to 4,000 piculs in 1917. The main source of supply at present is in Hunan at Shuikoushan, which, in 1914, had an output of 4,000 tons of lead and 12,000 tons of zinc. Zinc is also widely distributed throughout Kweichow, Yunnan, and Szechwan Provinces.

TIN.—Twelve thousand long tons of pig tin, valued at Tls. 12,000,000, were exported from China in 1917, bringing China to the fore in aiding to supply the world's tin consumption.

WOLFRAMITE.—Wolframite is used principally for hardening steel. The unprecedented activity in the steel industry resulting from the war has caused the large steel companies to make extra efforts to secure supplies of tungsten. As in almost every case where a demand for raw material arises, China can be depended upon to contribute. Kwangtung and Hunan are now the chief sources of supply in China, although deposits are reported in a few other sections of the country. At present most of the Chinese tungsten is shipped to Hongkong, from which port it goes to Great Britain and the United States, although a small shipment from Swatow went to America via Shanghai. On December 11, 1917, Consul General Anderson, at Hongkong, reported that about 120 tons a month were being shipped to the United States and 130 tons to Europe. Consul Johnson, at Changsha, reports that 182 long tons of wolframite, valued at $150,000, were exported from Changsha to the United States during 1917 and that the crumbled ore is found in the detritus at the foot of hills and in the gravel of streams near the southern border of Hunan. The natives find it easy to collect and peddle it to local dealers. Wolframite cannot be used in the United States in the steel industry if it contains less than 60 per cent. of tungsten acid or more than 2 per cent. of copper. The Chinese wolframite is of high quality, as it contains only a trace of copper and runs from 60 to 65 per cent. (occasionally to 70 per cent.) tungsten acid. The Chinese sell it by weight, whereas in the United States the practice is to purchase it at a certain price per unit per cent. of tungsten acid. The Chinese in Hongkong are now (August, 1918) asking Tls. 1,100 per ton for 65 per cent. ore, whereas the market price in New York is $20 gold per unit per cent. tungsten, which would be $1,300 gold or less than Tls. 1,000 per ton.

The attention of manufacturers, merchants, commission agents, buyers and sellers, is particularly called to the advertisements appearing in this issue. Among them will be found intimations of business interest, which should lead to mutual benefit.

CHINA

The Chinese Republic extends from latitude 53 degrees North to 18 degrees North and from longitude 74 degrees East to 134 degrees East. It comprises the "Eighteen Provinces" of China Proper and the "Three Eastern Provinces" of Manchuria; Mongolia; Chinese Turkestan; and Tibet. The total area of Chinese territory is estimated at between 4,278,352 and 4,376,000 square miles, apportioned as follows:—

China Proper	1,896,500* sq. miles
Mongolia	1,367,953
Chinese Turkestan (Sinkiang)... ...	550,579
Tibet	463,320

*Including Manchuria, 363,700 sq. miles.

And for the population of this vast area, a census of families taken by the Government in 1910 multiplied by 5.5, the average, in all territories except Manchuria, where the multiple 8.38 was adopted, gives the following returns:—

China Proper	304,003,000
Metropolitan District (Peking, etc)...	5,671,000
Manchuria	14,917,000
Sinkiang	2,491,000
Manchu Military Organization	1,700,000
Dependencies	760,000
	329,542,000

To this should be added the foreign estimate of the population of Tibet, making a total of 331,000,000. The Chinese estimate of Tibet is 6,500,000, making the total Chinese estimate 342,639,000; but the estimate of 331,000,000 is more generally accepted. Some authorities estimate the total population at a round 400 million.

The greater part of China is mountain land, and only along the channels of the Yellow River and the Yangtze in their lower reaches (extending in the case of the former for nearly 300 miles) is there a low-lying alluvial plain, stretching to the coast and north and south for several hundred miles. The mountainous area extends to the coast in the southern provinces.

RIVERS.—The drainage of China divides itself into two sections, the great inland system of the Central Asian plateau and the Pacific Ocean. China Proper is one of the best watered countries in the world, for in addition to the three great rivers in the centre, the north and the south, respectively, it possesses a multiplicity of smaller streams and lakes. The four rivers, the Yangtze, Huangho, Sikiang and Peiho, together drain four-fifths of the country. A description of the Yangtze and its trade appears in a special article in this issue.

The Huangho (otherwise the "Yellow River") is a stream some 2,700 miles in length, navigable only in parts. The Huangpo rises in Tibet, at an altitude of 13,800 feet, traverses the province of Kansu, enters Mongolia, forms the boundary line between Shansi and Shensi, and in turn for a short distance between Shansi and Honan, cuts across the southern tongue of Chihli, and traversing Shantung finally enters the Gulf of Chihli The Huangho has changed its course on several occasions. In 1852 its dykes to the northeast of Kaifengfu, in Honan Province, gave way, and the stream finally settled down along the bed of the Tachingho, a course about 90 miles to the eastward of the breach. At the time the new course was taken the bed of the Tachingho was sufficient to hold even the flood waters of the Huangho, but silting began at once and the flood waters each year came closer and closer to the river bank. In 1883 they began to overflow, gently flooding the plain, and in consequence dykes were constructed on both sides of the river from Tungahsien to the sea. Prior to this dykes had been gradually continued down from Honan to Tungahsien. The new ones were built from five to seven miles apart, to leave room for the flood current and for the deposit of silt which the river was unable to carry down to the sea. Two years later the farms below Tungahsien were permitted to build an inner line of dykes for the protection of reclaimed lands, with the result that the outer dyke was rendered useless In the meantime the bed of the river had risen in some places from 15 to 20 feet above the level of the plain. In 1898 when a disastrous flood occurred, owing to a break 15 miles below Lokou, silt and sand were deposited over an area of some 200 square miles to a depth varying from 2 to 10 feet, amounting, it is estimated, to an aggregate of over 16 billion cubic feet. The Yellow River is known as "China's Sorrow,"—due to a reference to it by that term in the will of the Emperor Chia Ching in 1820,—owing to the devastation that its vagaries have caused.

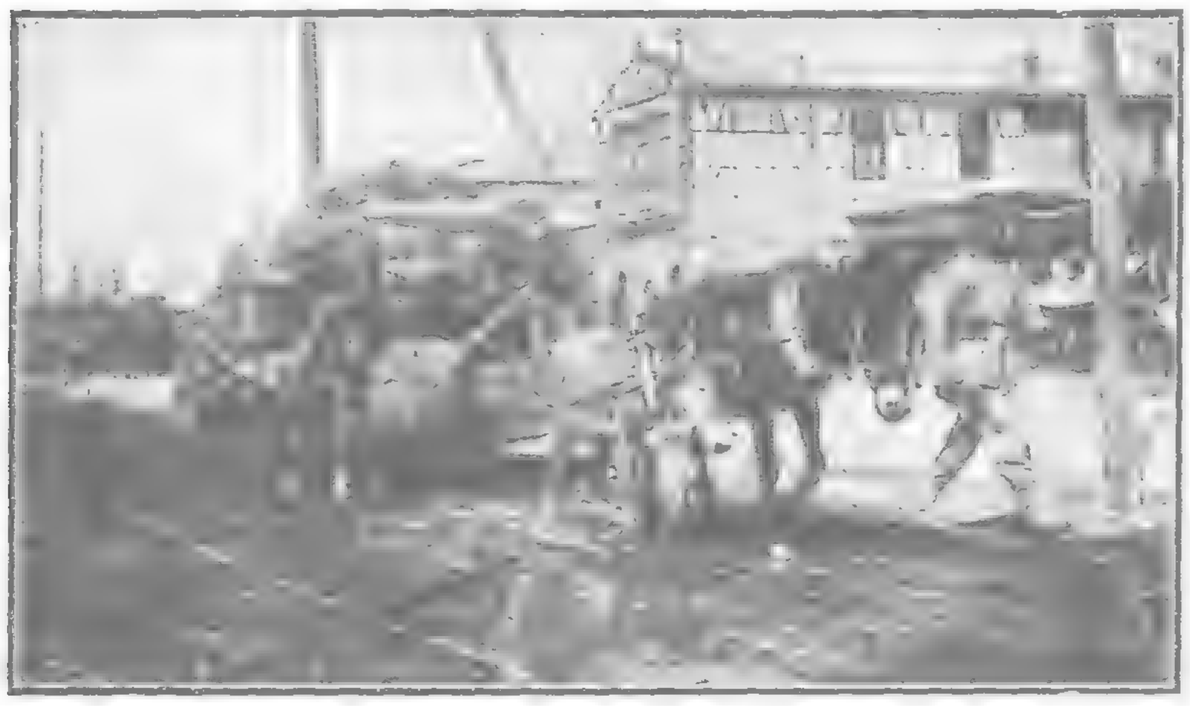


Photo: The Kodak Shop, Tientsin

FROM CART TO JUNK ON A RIVER SIDE IN CHIHLI PROVINCE

The river is navigable by junks and other shallow-draft vessels over most of its length from Lanchowfu, in Kansu Province. From Paotowchen, in Mongolia near the border of Shansi, to Ninghsiafu, in Kansu Province, a passenger service by gasoline launch will be started by the Military Governor of Kansu Province in connection with some foreigners, in the Spring of 1919. Two flat-bottomed launches were shipped in sections to the river in September, 1918, to be used in the trade between the two cities mentioned. On the course of the stream between the borders of Shansi and Shensi, below Paotowchen, the river rages through narrow and precipitous gorges—so deep it is recorded as effectually to shut out the heat of the sun and preserve through the summer the ice which forms in the cold season—needless to say, effectually preventing navigation over most of that section of the course. The part of the stream which will be opened to power navigation in 1919, as mentioned above, will eventually be tapped by the railway from Peking via Kalgan, which now terminates at Fengchen, in Shansi Province, and will become commercially important thereafter. The course of the river through Honan and below is used for navigation by native craft of flat-bottom build, looking more like rafts than boats. They hold about two tons of cargo, or frequently as little as half a ton. They are built in upper Honan, where lumber is plentiful and cheap, and after discharging their cargo in the valley below, where timber is scarce, are sold for fuel to save the labor of rowing them up the river again. On the lower course of the river junks and a few power launches are in use.

The Sikiang (West River) is 1,250 miles long (if the Hungshui be taken as the parent stream), and traverses the provinces of Yunnan, Kweichow, Kwangsi and Kwangtung. The river rises in Yunnan; at Samshui, in Kwangtung, it divides itself into several branches forming the Canton Delta. The northern branch, the Chukiang, or Pearl River, flows past Canton, emptying itself into the sea through the Bocca Tigris, between Hongkong and Macao; the southern branch, known as the Sikiang, enters the sea west of Macao. Its navigability is mentioned in a special article in this issue.



A HUGE WHEELBARROW, GUIDED BY TWO MEN AND DRAWN BY A PONY AND A DONKEY. ENORMOUS LOADS ARE INGENIOUSLY ROPED ON THESE VEHICLES, THE WHEELS OF WHICH ARE SOMETIMES 5 FEET IN DIAMETER

Other important streams, which are mentioned in the descriptions of the ports concerned, are the Amur, on the Mongolian plateau; the Liao, which empties below Newchwang; the Hwai, which rises in the south of Honan and pursues an easterly course across Anhwei and empties into the Hungtze Lake; the Sungari, a tributary of the Amur; the Yalu, which forms the boundary between Manchuria and Korea; and the Whangpoo, on which Shanghai is situated.

CLIMATE.—The climate of China may be said to compare favorably with that of any other part of the world lying between the same parallels of latitude. Owing to its enormous extent, however, it offers every variety of meteorological condition from the 60 degrees of frost in Manchuria to the malaria-ridden swamps of sub-tropical Yunnan. In the northern section the winters are severe, the ground is covered with snow, the rivers remain frozen for several months, and the greater part of the coast line of Chihli, together with the Gulf of Liaotung, is ice-bound. Dust storms are prevalent in the spring, late autumn and winter months. Central China is more humid, with a marked rainy season in summer. In Southern China sub-tropical conditions obtain, but with conspicuous modifications due to altitude On the high table-land of Central Asia and on the plains of Mongolia the extremes of heat and cold are combined with unusual dryness. In Western Mongolia a region of excessive dryness is met, where for months not a single snowflake will fall, but where the cold is so intense that the bodies of dead animals dry up as they fall without passing through the process of putrefaction For meteorological statistics China is indebted to the observatory at Sicawei, maintained by the Jesuits, and to the observatory at Hongkong.

PEOPLES AND LANGUAGE.—Upwards of 60 different peoples or tribes are to be reckoned among the inhabitants of China and its dependencies who comprise, roughly speaking, one-fourth of the inhabitants of the earth. Practically nine-tenths of the total population is to be found in China Proper, and of these the great majority is of the Chinese race. The theory that the Chinese originally migrated from the west has obtained general credence. However, Chinese literature knows only of the present provinces of Kansu and Shensi as the cradle of Chinese civilization. For practical purposes we may regard the China of to-day as existing from the 21st century B.C., although the Chinese have selected the date of their origin some 30 centuries earlier. The people of China Proper enjoy a written language in common, divided into several classes, although the style of composition differs so widely in each class that one conversant with only one of the lower classes may not be able to interpret the higher literary styles. It can be said, generally, that the school of composition used in business and official circles can be interpreted by educated Chinese of any section or province. No such uniformity exists in the spoken language. Variations in the language of the several sections are so great that strangers cannot understand one another's speech; worse confusion, it is difficult for Chinese from cities separated from each other by fifty or a hundred miles to understand one another. An attempt has been made at standardizing the spoken languages by the selection of the parent of most of them, the "Mandarin," as the official tongue of all China.

PRODUCTS.—Wholesale destruction of forests has denuded a large part of China of growing timber, and lumber is imported from abroad. Virgin forests are found only in inaccessible places, such as in Northern Manchuria. Afforestation has been attempted in a desultory manner, but of the rare examples of tree planting in China it may be said that the forests are not permitted to attain their proper development for market purposes. Timber is generally used in Chinese architecture in the round form in which it grew, and architecture generally conforms itself to the short and slender poles which come to the markets. When large beams are needed, such as for the construction of harbor works or modern buildings, sleepers for railways, etc., they are imported. Pine from the Oregon mills is largely used for such purposes, and recently has been selling on the Chinese market for about $110 gold per thousand feet, due to the lack of supply and high freight rates. Sleepers come from Japan and Australia.

Rice is the staple food of the Chinese. It is grown in China in all but three provinces, Shensi, Shansi and Chihli, where its cultivation is impracticable because of the lack of convenient methods of irrigation. The largest producing centres are the provinces of Anhwei, Hunan, Kiangsu and Kwangtung, the chief ports of shipment being Wuhu, Shanghai and Changsha. Formerly a form of tribute to the Peking Court was paid in rice large quantities going forward from Anhwei, Chekiang, Kiangsu and Shantung, while the provinces of Honan, Hupeh and Kiangsi made a cash settlement in lieu of rice shipments. In ancient times much of the rice went up the coast or through the Grand Canal in junks, but in the last years of the Manchu Dynasty the steamships of the China Merchants' line were carrying 100,000 tons while but 20,000 tons passed through the Grand Canal. China does not produce all the rice she consumes, for large quantities are imported from Indo-China and elsewhere, while the exportation of rice from China is forbidden. While rice has been called the staple food of China, it is true that there are millions of Chinese, in the areas where no rice is grown, to whom the food is a luxury.

In the northern section of the country wheat and kaoliang, barley, and other grain, as well as beans, are widely grown and constitute the staple food. Rice is imported by northern consumers who can afford it.

Other important products of China are silk, tea, beans, cotton, sesamum, vegetable oils, tobacco, peanuts, essential oils, wool, skins and hides; and as each of these is described in detail elsewhere in this issue no further description is needed here

The currency of China is described in another article in this issue. Industries are mentioned throughout the text. Special articles on Commerce, Railways, Minerals, the Postoffice, Telegraphs, the Maritime Customs, etc., are given throughout this work, and the reader is referred to them for detailed information.



A CART IN NORTHERN CHIHLI, CHINA

The Early Traders of Old Canton

Trials and Tribulations of the Founders of Modern Trade in China

Canton, the capital of Kwangtung Province, oldest of all the Chinese trading ports, is one of the four great treaty ports, ranking after Shanghai, Hankow and Tientsin in importance. Owing to its favored position it became the first Chinese port to which the attention of foreign traders was directed. Arab navigators are known to have visited Canton as early as the tenth century, the Portuguese found their way there early in the sixteenth, some hundred years later the Dutch came on the scene, in 1684 the English founded there the monopoly known as the East India Company, which existed until 1834, and in the closing years of the East India Company's relations we find traders of various nationality struggling to overcome the prejudices of the natives and the cupidity of their officials for the opportunity of selling to the Chinese the foreign goods they needed and of buying their teas and silks.

Canton was a wealthy mart centuries before the arrival of the foreigners. It commands the rich basin of the West River; behind it is a tributory region which is rich in agricultural resource and densely populated with natives who have long been accustomed to the use of foreign wares. Its treasures of teas, silks, native handicraft in precious metals, ivory and gems, and a long list of native produce then much in demand in Western countries, attracted the early traders. Later came the import trade in cotton goods and manufactured sundries and then the opium trade. For the sake of the commerce and its future, the early foreign merchants bore humiliating and oppressive treatment, and as the history of this early period is the history of foreign relations in China, something of the story will be told here. Incidentally it leads to an understanding of the modern institutions under which partial control of the Treaty Ports and the Customs is held by the foreign Powers. While the exactions of the officials at Canton in the early years were so burdensome as to nearly extinguish at times the commerce that was the foundation of the prosperous trade of the present day, it must be borne in mind that the situation in Canton was distinctly preferable to that in the northern ports where even the appearance of the "foreign devil" was not countenanced. The people of Canton were at least receptive to commerce with foreign merchants so long as its control was in their hands, and thus it came about that the struggle for equal opportunity and just treatment was staged at the southern port.

Squeezing as a Fine Art

On the traders of the East India Company for 150 years the officials of Canton heaped impositions and exactions to the limit of human endurance, and when the breaking point would arrive—on the frequent occasions when the traders threatened to leave or the duties and bounties increased the price of their goods beyond the buying power of the people—the officials would pacify the merchants by fair promises, and by slightly abating their burdens, and thus secure another hold on their confidence and a fresh lease on the trade that was creating official fortunes. However, history reveals that the removal of an imposition was only followed by one more cunning, and Chinese ingenuity never exhausted itself in the preparation of new schemes for extortion. Imposts were piled one upon the other; a Chinese equivalent of tonnage dues in a "measurement charge" on each entry of a vessel, extortionate pilotage fees, gifts or "cumsha" for the horde of officials who claimed authority from their Emperor for the supervision and regulation of foreign commerce, numberless small charges that were offensive for their uncertainty as well for their total amount, and ruinous boat hire from the anchorage at Whampoa, a few miles below Canton, where ocean-going ships discharged their cargo, were all presented in such an amazing variety of forms that the bewildered merchant hardly knew how little he had won or how much he had lost until his vessel was again in neutral waters or had returned to its home port.

The halting point was reached in the middle of the 18th century, when the Chinese schemes for applying the final ounce of pressure on the trade had succeeded in destroying the patience of the traders. Fresh promises were made, a "reform" inaugurated, and trade began anew under agreements by which petty extortions were classified and the "cumsha" was fixed at a lump sum. The chief advantage gained at this time was that the traders were to know their burdens beforehand. Shortly thereafter the foreigners were introduced to a new arrangement described as the invention of the Emperor himself—an extension of the "Hong merchants" plan, by which a group of only thirteen privileged Chinese merchants were to divide the foreign trade. The hong merchants were to serve as a monopoly as well as the medium between the haughty mandarins and the foreigners, and although their number and organization altered occasionally in one form or the other the hong merchants held their position for nearly a century thereafter.



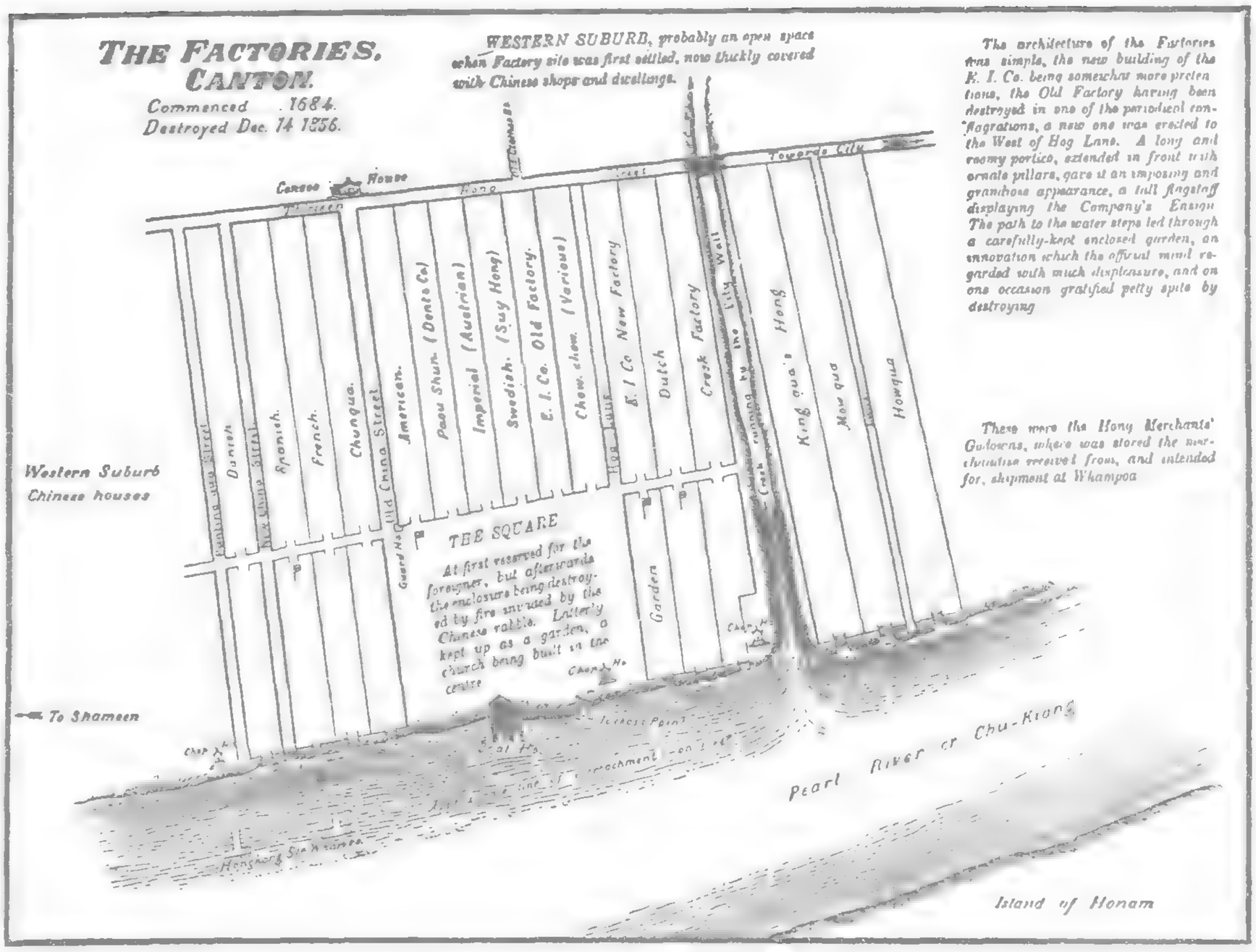
THE CANTON FACTORIES : FROM A PAINTING BY CHINNERY

China's First Customs Charges

A great deal of light is thrown on this era of foreign relations by an old work, the "Hoppo Book," described as "An Explanation of the Customs House Books, translated A.D. 1753, with the

Manner of settling the Duties of all Goods Imported and Exported at the Port of Canton." This old work, in form a manuscript written on old-fashioned paper of Dutch manufacture in the English language with the diction and orthography of the 18th century, was brought to light by a paper read by Mr. Hirth before the Royal Asiatic Society of Shanghai on August 29th, 1882. The name of the author is not known, but it appears that the manuscript was prepared by one of the factors of the East India Company, or one of the Company's employees, for the benefit of a friend or employer at home.

The tariffs in the "Hoppo Book" and the accounts of the charges and impositions assessed by the "Hoppo," or representative of the Chinese customs (who earned the name, by the way, through being the representative of the Ho-Po, or Board of Tribute, at Peking), give an inkling of the regulated and classified burdens then being laid on the traders. Five kinds of taxes were being levied on foreign trade at the period :—



PLAN OF THE FACTORIES AT CANTON

First, an import duty at a fixed tariff, often levied on ship's stores and goods not landed or stored;

Second, an export duty payable on all shipments of Chinese produce to foreign countries and on foreign goods taken from Canton to other Chinese ports;

Third, sundry squeezes on imports and exports for such purposes as fees for weighers, linguists, branch offices of the Hoppo, remittance fees on duties transmitted to Peking, and so forth;

Fourth, measurage, the Chinese equivalent then for tonnage dues;

Fifth, "cumsha" for the officials; the word, in the pidgin-English vocabulary, meaning a gift. Its origin is doubtful; it is probably a corruption of an expression in the Fukienese language meaning "Thank you," or of an Indian attempt at pronounciation of the word "commission." Others trace it to "*kum sha*", meaning "gold sands" in the Cantonese language.

The import and export duties under the first heading were embraced in three Chinese books known as, "The Book of True and Fixed Duties," "The Book of Comparison," and "The Book of Valuation." The first mentioned was compiled by the Emperor Kang He in 1687, and it contained a list of the foreign imports known to the Chinese at that early stage of foreign commerce. As a solemn edict of Kang He required that the Book of True and Fixed Duties should not be altered or added to, the taxation of new articles of foreign manufacture had to be provided for by artifice; and the second of the tariffs, The Book of Comparison, was the medium.

As new articles appeared they were listed in The Book of Comparison, and each was compared with some item in the Book of True and Fixed Duties and made to pay the same duty or multiples of the same duty. Thus, a new import in the shape of a wax figure being approximately five times the value of a piece of jasper, listed in the first book, the wax figure was charged with the duty on five pieces of jasper, and so on. Other comparisons were of swords, muskets, hand-organs and watches with spying glasses; a mariner's compass, a knife, a pair of scissors or a set of knives and forks with a pair of spectacles.

The third book mentioned, The Book of Valuation, assessed export duty, which was a fixed charge per unit plus a levy of 6 per cent.

Besides these authorized levies were those mentioned under the third heading—sundry small squeezes for weighers, linguists, government offices, charities, and so forth. Of these the unknown author says,

"It is very difficult, if not impossible, to ascertain these charges exactly, as the merchants who at present pay the duties and settle all the Custom House business are obliged to comply with small encroachments and are cautious of being too stiff in asserting their right, since those very people who receive it have it in their power to be very troublesome and greatly impede their business."

However, some of the commoner minor charges are given in an example of the export charges on a picul of tea:

	Local Tls.
The fixed duty, as per The Book of True Values	0.20
Remittance fee to Peking, 10 per cent. of the duty	.02
Conversion of local taels to "pure silver," 8 per cent. .	.018
The "thun-fang," an unexplained squeeze of 2 per cent. ...	.004
The export duty of 6 per cent. in The Book of Valuation...	.48
Piculage, a squeeze for division among officials	.038
Fee for the weigher	.002
Fee for the official penmen	.016
Contribution to a joss house	.004
Fee for the official linguist	.02

It seems that the small contribution prescribed by custom for the weigher was supplemented largely by "cumsha," for he fixed the official weight of shipments generally according to the merchants' patience or their standing in his private account book. Whatever the weight arrived at, the shipper was granted a small boon in an allowance of 10 per cent. for tare. The "Hoppo Book" complains that this allowance was not always sufficient; that tea packages, for instance, manufactured as lightly as possible, represented around 14 per cent. of the total weight. Very likely the extraordinarly light but strong tea package of the present day, made of thin wood reinforced with strong paper, is due to early attempts at bringing the weight of the box within this tare limit.

How the Clippers Were "Measured"

The "measurage charges" mentioned under the fourth heading were calculated on the length and width of a vessel, the unit being a "cubit" theoretically 14.6 inches in length. A vessel of 75 by 23 cubits paid .777 of a tael per cubit; of 70 by 21 cubits

paid .7143; and of 60 by 20 cubits paid .5000. Vessels of sizes between these limits were charged under a vague method, the use of which in the ship's favor might have been facilitated by bribes. The measurer, who with his assistants was entitled by custom to several gifts, was supposed to take the length of the vessel from stem to stern, but when the master of the first ship to fall under the regulations refused to be scaled on that plan and it began to look dark for the success of the scheme, by connivance with the officials the measurer accepted a bribe to take instead the distance from foremast to mizzenmast. Thereafter the distance between masts was accepted as the length of the vessel, and the width was taken of the middle deck just before the mainmast. The skipper probably imagined he had gained a point over the Chinese. But that was not frequently done in those days, as the skippers who followed him could testify from their experiences with a cubit of marvellous flexibility, ranging from 8 inches to the proper length according to the temper and prosperity of the merchant. During all the years the measurement charge remained in existence much time was spent in fruitless effort at standardizing the unit, but nothing was achieved. We have a record of a vessel 78.1 by 24.2 cubits which paid Tls. 1,469, and a note adds that of this the local officials rebated 20 per cent. Of the remainder it appears that the Hoppo retained 10 per cent. and another official and his assistants absorbed 2 per cent. To the net sum the merchant was required to add remittance fees to Peking and a sum sufficient to convert the local tael into the "pure silver" required by the Emperor, 7 per cent. in this instance. After all the manipulations were finished and sundry measurers' fees were added the ship had paid Tls. 1,407.84.

A captain who preferred to anchor at Macao instead of proceeding to Whampoa paid measurement fees and gratuities amounting to about half the sum levied at the latter place; but against this saving he had to pay a license of Tls. 2,520 to the hong merchants.

In addition to the measurage a vessel was required to take up a pilot at Macao and pay $150 for his services. Here also the ship was required to engage an interpreter for the voyage to Whampoa, at a fee of from $175 to $250 quite apart from what he might make otherwise. The ship had to take on a compradore in addition, who was paid a fee varying from $50 to $216 with the privilege in addition of supplying provisions and all other articles for the ship and her crew at prices on which it was impossible to put any check.

The ship's interpreter, who was no mean squeezer himself with the enormous advantage he held in the foreigners' ignorance of the Chinese language which forced them to rely upon him in most of their transactions, did not survive his vessel's trip from Macao to Whampoa and back again without contributing something to the officials' pockets. At the establishment of the No. 1 Hoppo he had to part with Tls. 10, to the No. 2 Hoppo further down the river he unwillingly presented Tls. 5 more, and the customs station at Whampoa collected Tls. 25 more of him. If the sailors wished the use of a certain island off Whampoa for purposes of recreation he was taxed with an additional Tls. 12.

"Squeeze" for the Emperor

The "cumsha" mentioned under the fifth heading was a gift to the local officials, founded in 1689, which existed until well in the 19th century. Formerly just as much as the traffic could stand, at the time with which we are dealing it had been modified to a lump sum of Tls. 1,950 for each entry of a vessel. While the lump sum had been going into the pockets of the mandarins a few years before, it appears that the Emperor was taking the lion's share at the time the "Hoppo Book" was written. At least, here is the distribution claimed by the local officials of the time:

		Local Tls.
To the Emperor	On the ship's arrival	1,089.64
,, ,,	On the ship's departure	516.56
,, Contribution to the poor		132.00
,, Security's dispatchador		12.00
,, Ship's measurers, for boats, etc.		8.40
,, Soldiers who attend the measuring		5.56
,, Soldiers connected with the government office		16.78
To Foyen	On notice of the ship's arrival*	2.80
,, Quang-chu-foo	do.	2.80
,, Pan-eu-hien, Whampoa	do.	1.70
,, Nan-hay-hien	do.	1.20
,, Kewn-min-foo, Macao	do.	1.20
,, Government officers who attend the ship during her stay in the river		150.00
,, Miscellaneous plunder		9.35

*Probably outer customs stations.

When a ship berthed at Whampoa the captain was required to pay daily a sum for the Hoppo's watchmen and inspectors, their food, and miscellaneous fees to the Hoppo's offices, totalling some Tls. 11. Our unknown author mentions a few of the other squeezes and charges. For example, there was a small bribe of one-tenth of a tael paid to the Hoppo for each piece of silk piece-goods, exported, to divert his attention from searching for yellow colored silks, the use of which was reserved for the royal family. A refinement of squeezing is mentioned in the claim for a reduction of Tls. 1.30 in the value of each lot of Tls. 100 weight of pure silver remitted by the merchants to the customs, which started at four or five hundredths of a tael and was gradually increased until the limit of the merchants' patience was discovered at Tls. 1.30 and another "old custom" had been established.

Meanwhile the officials had never overlooked an opportunity of heaping ignominy upon the traders. Posters and leaflets were circulated among the people holding up the "foreign devils" and "barbarians" to scorn and charging them with crimes of the most despicable nature; every untoward accident in the country was charged by the officials geomancers to their influence upon the native gods and spirits of luck and chance; and the most studied humiliations were heaped upon them. It was by these means that the sentiment of the common people toward the foreigners was effectually controlled, and at the same time similar propaganda was continually being addressed to the Court of Peking.

Decapitated for Helping the "Foreign Devil"

One naturally wonders why no redress was sought from the Emperor, who at that time was known to be favorably disposed to fair treatment of foreigners. The principal reason was the lack of knowledge of the language and the difficulty of access to Peking. For more than a century the teaching of the Chinese language to foreigners was held as a crime and the penalty for the teacher was decapitation. This restricted all communication between the merchants on the one hand and the people and the Emperor on the other to the medium of the official channels. It was not until 1761 that an adventurous messenger secured a footing in Ningpo and made his way to Tientsin and from there addressed a petition to the Court of Peking setting out the grievances of the foreign traders at Canton and asking for permission to open trade in the northern ports. The result was that the Emperor ordered the removal of some of the impositions levied at Canton and some slight rectification in the use of insulting expressions towards the foreigners. When the messenger returned to Canton he was called into the presence of the viceroy on the pretext that some redress would be offered; he refused to go without the company of other foreigners, and after some coaxing and promises on the part of the hong merchants the messenger and his party entered the viceroy's palace with considerable suspicion. On entering the presence of the viceroy they were required to do obeisance by being forcibly thrown on their faces, and then they were shown what purported to be an edict of the Emperor banishing the insolent messenger to imprisonment at Macao for three years. The messenger was actually carried away and held a prisoner for that term, and the native who wrote his petition was decapitated. An instance arising in 1755 shows the helplessness from extortion which the merchants labored under, for in that year a Hoppo in leaving his post at Canton demanded a grant of Tls. 15,000 of the foreigners and it was only after long intercession that he was persuaded to content himself with a payment of Tls. 3,300.

Dr. Williams, the first American missionary to China, relates that his first Chinese teacher at Canton, a man of considerable literary attainments, called on him in the guise of a shoemaker and during the course of his lessons kept prominently nearby a

pair of lady's shoes. Dr. Morrison, the first British missionary, who arrived at Canton in 1807, told Dr. Williams that one of his teachers always carried some poison with which to end his life and thus avoid the torture and decapitation threatened by the officials had he been informed against. In spite of all the restrictions placed upon the learning of Chinese by foreigners, in 1817 the East India Company was able to publish in Canton an excellent Chinese dictionary in 6 volumes of 5,495 pages which had been prepared by Dr. Morrison, which was followed in 1818 by Dr. Morrison's translation of the Bible. Dr. Morrison was employed by the East India Company as a translator, from 1809 to 1834, and during this time supervised the cutting of the first font of movable metal type, in foreign style, of the Chinese characters.

The Trade of the Early Days

It is not possible to give the importance of foreign trade during all these years. In 1820 the East India Company stated that their net loss on English products shipped from England to Canton had been £1,688,103 in 23 years; but it will be noticed that this did not include shipments of opium from India. Incidentally, this is a rather sharp contrast with the statement of Howqua, one of the hong merchants, that in 1834 he valued his estate at $26,000,000, which must have been the largest mercantile fortune in the world. Trade statistics from 1818 to 1833 are available, however. A fairly accurate account gives the yearly average of combined British and American trade at $21,234,905 of imports plus imports of treasure to the value of $3,890,869, and combined exports in the same period averaged goods to the value of $19,526,624 and treasure to the value of $3,506,422.

The American proportion of imports in the period averaged $3,630,586 in treasure and $2,161,724 in goods, of which $307,875 represented the average imports of opium. American exports in the same period averaged $6,453,492.

In the same period British imports averaged $19,025,601, of which opium accounted for $6,518,934 and cotton $4,174,441. The opium trade had grown from $1,648,500 in 1818 to $12,185,100 in 1833. British exports averaged $16,578,367 annually, with $7,671,385 representing tea and $5,311,810 representing miscellaneous commodities. Opium was an increasing item of import in the British tables; from one-sixth of their trade in 1818 it rose to nearly half sixteen years later. The opium trade grew largely because the natives took delivery of the drug from the hulks into which it was delivered and took the chances of satisfying the officials, and often of smuggling it past the barriers.

The Americans were the free traders of the time, in the sense of the word as then understood—that is to say, there was no privileged corporation in their country to exercise a monopoly in Chinese trade. The Yankee merchants asked only for equal opportunity. America at that time being principally an importing nation, with few manufactures and its resources as yet undeveloped, the American merchants came out with empty holds or a few goods bought from traders of other countries. It will be noticed that three-fifths of the American imports were of silver. The dissolution of the East India Company was at the insistence of the few English free-traders at Canton who were able to carry on business in the few lines not monopolized by the Company, and probably came about through their observation of the success of the free-trading American merchants even under their handicap of trading in silver.

Pioneer Merchants as Prisoners

The story of the times immediately preceding and following the dissolution of the East India Company in 1834 can bring this phase of foreign relations to a close. Dr. Williams relates that when he arrived at Canton a few years before the closing of the Company's operations (incidentally after a voyage from America which took 127 days), he observed some 125 merchant vessels stretched along the Whampoa anchorage and recorded that "the trade of the year was a very large one and the East India Company had the largest portion of it." Besides the East India Company he noted five independent foreign houses: Jardine, Matheson & Co., Dent & Co., and Turner & Co., British; and Russell & Co. and Olyphant & Co., American. The foreign residents at the time numbered about 250. He found them kept virtually as prisoners in the foreign houses, thirteen in number (by a mere coincidence equalling the original number of Chinese "Hong merchants" or monopolists), their spacious buildings averaging 85 feet in breadth and some 700 feet deep, with gardens 400 feet deep extending to the river. He notes that the residents were not permitted to go into the streets; recreation was had in the gardens fronting the foreign buildings, and three times a month a small party of the foreigners were permitted to visit a flower garden at Fati, across and up the river a mile distant, under the guidance of an interpreter who was responsible for their conduct. Foreign women were not then permitted in Canton, so the traders kept their families in Macao, where they repaired for the three months of each year, during the typhoon season, when vessels were not permitted to enter Whampoa and residence in Canton was denied them. Nor were the traders permitted to enter the gates of the city; petitions were received only through the hong merchants, who received the documents at a certain gate in the wall. If the hong merchants had a hint of particularly unpleasant contents and warned the mandarins beforehand, acceptance of the petition was usually refused. Dr. Williams relates that one Mr. Innes brought such a petition to the gate and, after waiting all day, had it refused; but when he sent a servant for a bed as an indication of his intention to remain all night the petition was grudgingly accepted. Mr. Jardine, one of the founders of Messrs. Jardine, Matheson & Co., was not treated so kindly on an occasion when he brought an unwanted petition, for Dr. Williams records that he was met with a blow on the head, and adds that as he gave no indication of having felt the rap he was known by the Chinese ever after as "T'it T'au Lo-Shu," "Iron-headed Rat."

At this period the "Thirteen Hongs" group of native monopolists (so-called although the number had decreased to seven) still held a monopoly on the more lucrative branches of foreign trade. However, they had licensed a number of lesser merchants to buy directly of the foreigners at the foreigners' price, charging these lesser merchants a moderate profit for guaranteeing the account. In fact, toward the end of the East India Company monopoly all the old arrangements were becoming disorganized. Independent foreign traders were setting up private establishments, and the Consoo Fund, a sort of sinking fund which was raised by a surtax on foreign trade for paying the debts of any of the licensed merchants who might become insolvent, was being squandered by the officials for purposes described by them as gifts to propitiate the Emperor and for repairing rivers thousands of miles distant.

Two years after the dissolution of the East India Company the number of foreign firms had grown considerably, for then there were 31 British, 9 American, one each of Portuguese, Dutch, German and Swedish, and 11 Parsee houses, and the foreign population totalled 307.

Troubles Leading to War

From this point the history of Canton may well be condensed. With the dissolution of the East India Company in 1834 an attempt was made to open trade directly with the natives by ignoring the licensed hongs. Lord Napier was appointed chief superintendent of British trade and put in his appearance at Canton. The officials refused to receive him; they refused even to accept a letter he addressed to them under authority of his Sovereign. Eventually the licensed merchants sought to control him by the timeworn expedient of stopping their trade. At this point Lord Napier's state of health required him to leave Canton, going to Macao, where he died a few days later. Upon his departure the trade was reopened. The Chinese excuse for refusing to accept the mission of Lord Napier was that they were in doubt as to his position, and upon his death they demanded of the foreign merchants that they address their government for a superintendent about whose status as a commercial chief there would be no doubt. A superintendent put in his appearance, and others followed, but nothing was accomplished in the way of free trading with the native merchants. As a matter of fact the opium question had at this time enraged the Chinese to the point of desperation; they laid fresh oppressions on the merchants, forced from them and destroyed their stocks of opium, amounting to 20,283 chests; and by 1839 the antagonism against foreigners had reached such a state that the merchants were forced to abandon Canton. Attacks by the Chinese upon English ships became numerous; in 1840 the Chinese officials offered rewards for the capture of English ships and bounties for the capture or

slaughter of English subjects. The foreign trade in opium and other merchandise had become of such importance to the common people that perhaps they felt in sympathy with the traders; an indication of this is the fact that natives who went out on raiding missions had to leave their families as hostages against their guarantee that they would not assist the enemy. The first English war upon China ensued, beginning with an attack upon Ningpo on July 5, 1841; ports and rivers were blockaded; Canton was threatened with capture, and a pecuniary ransom was taken in lieu of its occupation. The British campaign in Central China followed, with the resultant signature of the Treaty of Nanking on August 29, 1842, by which the hong monopoly at Canton was abolished, Hongkong was ceded to Great Britain, and Canton, Amoy, Foochow, Ningpo and Shanghai were declared open to foreign trade.

The lesson was without effect upon the officials at Canton, once hostilities were discontinued. Business was resumed there under difficulties something worse than in pre-war days; the treaty of Nanking was entirely disregarded by the local mandarins. In the years that followed oppression of the most intolerable sort was resumed. The British fleet re-opened hostilities in 1856; Canton was taken on December 29th, 1857, and the city was occupied by the British and a French force until 1861.

Trade was resumed in 1857. When the merchants returned they found their buildings in ruins. Meanwhile the doctrine of extraterritoriality was securely founded, and the British and French had claimed as their territory a mud flat off the city known as Shameen. The site was filled in, the work being completed in 1859, the cost being shared by the British and French in the proportion of four-fifths and one-fifth respectively, and the area was divided in the same proportion between the two powers. Shameen is still the foreign settlement of Canton.

Since the establishment of the settlement there have been a few disturbances, but these have quickly passed by. The natives have learned to appreciate foreign trade. The wiping out of all the old destructive imposts and squeezes has been accomplished by the establishment under foreign control of the Maritime Customs there and at all the numerous Treaty Ports of the present day, and the principle of extraterritoriality by which the foreigner carries with him the law of his own land is now practiced with great benefit to the foreigner as well as the native. With the opening of the additional treaty ports on the Northern coast and on the Yangtze, naturally the trade of Canton suffered a serious decline: but as the Chinese have learned more and more the uses of foreign goods, and the cost of foreign merchandise has been lessened by fair customs treatment and modern transportation methods, the trade of Canton has had a decidedly upward tendency. The trade of the port increased from twelve million taels in 1864 to a hundred and six millions in 1914.

Weights, Measures and Money in China

WEIGHTS.

English Terms:		English Weight:	Chinese Terms:
1 Tael	=	1.333 oz. avoir.	Tael: *liang*
16 Taels = 1 catty	=	1.333 lb. avoir.	Catty: *kin.*
100 catties = 1 picul	=	133.333 lb. avoir.	Picul: *tan.*
120 catties = 1 stone	=	160.000 lb. avoir.	Stone: *shik.*

16 piculs, 80 catties, equals approximately 1 ton of 2,240 lbs.

LAND MEASUREMENT.

The *Mow*, which is the unit of measurement, is almost exactly ⅙th acre.

MONEY.

English Terms:		Chinese Terms:
10 cash	= 1 candareen	Cash: *li.*
10 candareens	= 1 mace	Candareen: *fun,*
10 mace	= 1 tael	Mace: *tsin.*
		Tael: *liang.*

The value of the cash is wholly theoretical. No foreign equivalents of Chinese money are given for the reason that silver fluctuates in value; a complete explanation is in an article in this issue.

LENGTH.

The Chinese "inch" is 1.41 inches English; the "foot" is 14.1 inches English. The "*li*," the Chinese unit of road measurement, is very nearly ⅓rd English mile.

Note.—Weights and measures in China vary in every province and almost every district, and differ in the same district for different kinds of goods. The units given above are those commonly used among foreigners and in the treaty ports.

The Value of the Haikwan (Customs) Tael in Foreign Currency.

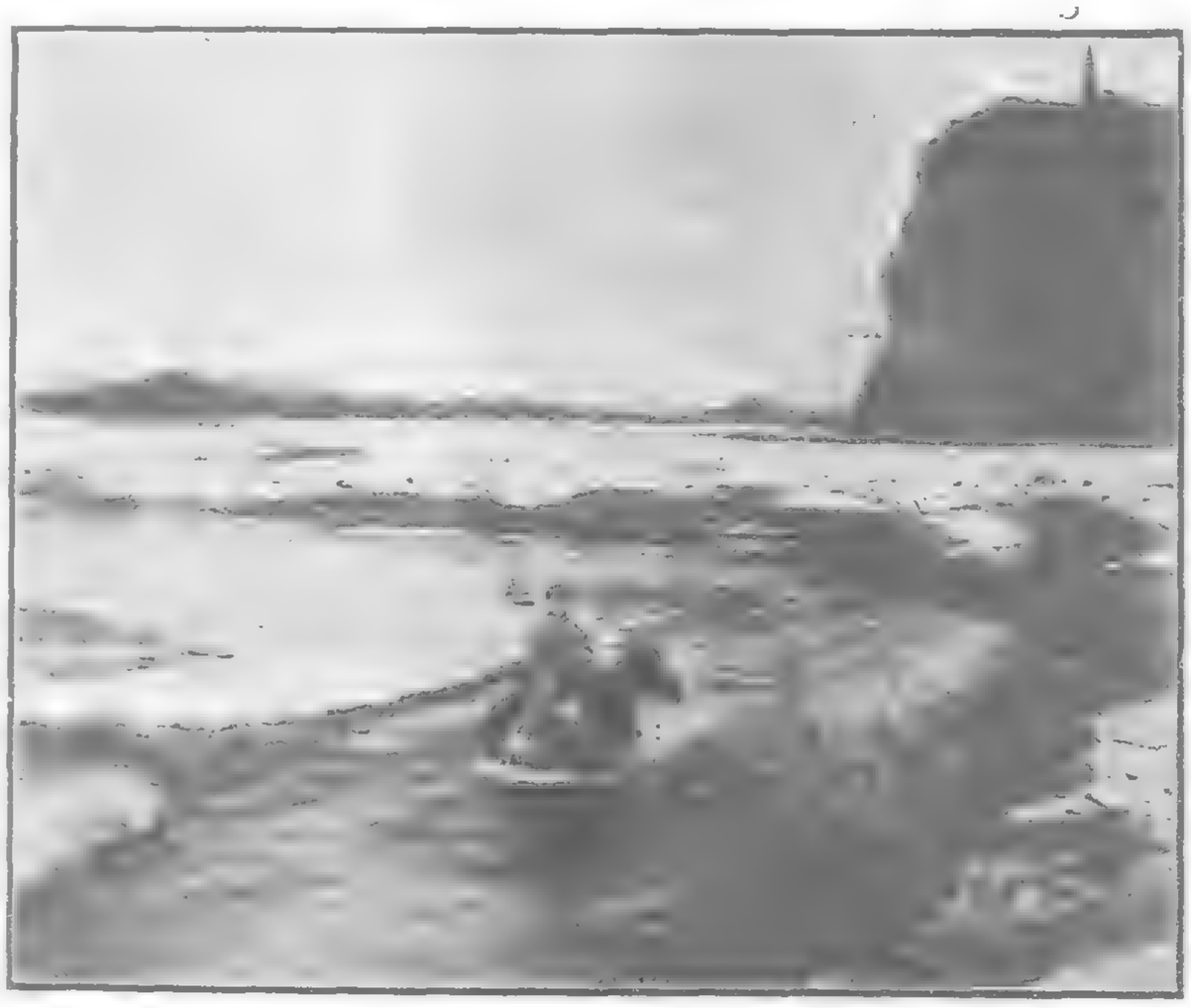
The equivalents of the HAIKWAN TAEL, in which the Customs Values, mentioned in this issue are stated, at the average Sight Exchange on London, New York, Paris, Calcutta, Yokohama, and Petrograd, respectively, are given below for the years 1914, 1917 and 1918.

Year	English Money.		American Money.	French Money.	Indian Money.	Japanese Money.	Russian Money.	Mexican Money.
	s	*d.*	*Gold* $	*Francs.*	*Rupees.*	*Yen.*	*Roubles.*	$
1914 ...	2	8¾	0.67	3.45	2.04	1.34	1.36	1.50
1917 ...	4	3 13/16	1.03	5.94	3.11	1.98	5.08	1.50
1918 ...	5	6½	1.11	7.06	3.93	2.36	—	1.50

The large increase in the purchasing power of the Tael between 1914 and 1917 is due to the scarcity and high price of silver. Its increased value in Roubles is due also to the depreciation in Russian currency.



CHINESE MAILMAN CARRYING PARCEL BASKETS ON A SLEDGE, MANCHURIA



MOUNTED CHINESE MAIL COURIER FORDING AN ICY STREAM IN DISTANT SINKIANG

Treaty Ports, Open Markets and Ports of Call in China

A. Customs Stations.—Treaty Ports at which foreigners may reside and trade.

Port.	Province	Date of Customs Opening.	By Treaty with
1. Aigun	Heilungkiang	July, 1909	Japan, 1905
2. Amoy	Fukien	April, 1862	Great Britain, 1842
3. Antung	Shengking	March, 1907	United States, 1903
4. Canton	Kwangtung	Oct., 1859	Great Britain, 1842
5. Changsha	Hunan	July, 1904	Japan, 1903
6. Chefoo	Shantung	March, 1862	Great Britain, 1858
7. Chinkiang	Kiangsu	April, 1861	Great Britain, 1858
8. Chinwangtao ...	Chihli	Dec., 1901	Imperial Decree, 1898
9. Chungking	Szechuan	March, 1891	Great Britain, 1890
10. Dairen	(Shengking)	July, 1907	(1)
11. Foochow	Fukien	July, 1861	Great Britain, 1842
12. Hangchow	Chekiang	Oct., 1896	Japan, 1895
13. Hankow	Hupeh	Jan., 1862	Great Britain, 1858
14. Harbin	Kirin	July, 1909	Japan, 1905
15. Hunchun	Kirin	Jan., 1910	Japan, 1905
16. Ichang	Hupeh	April, 1877	Great Britain, 1876
17. Kiaochou	Shantung	July, 1899	(2)
18. Kiukiang	Kiangsi	Jan., 1862	Great Britain, 1858
19. Kiungchow (Hoihow) ...	Hainan	April, 1876	Great Britain, 1858
20. Kongmoon	Kwangtung	March, 1904	Great Britain, 1902
21. Kowloon	Kwangtung	April, 1897	Great Britain, 1886
22. Lappa	Kwangtung	June, 1871	
23. Lungchingtsun ...	Kirin	Jan., 1910	Japan, 1905
24. Lungchow	Kwangsi	June, 1889	France, 1886
25. Manchouli	Heilungkiang	Feb., 1907	Japan, 1905
26. Mengtze	Yunnan	Aug., 1889	France, 1886
27. Nanking	Kiangsu	May, 1899	France, 1858
28. Nanning	Kwangsi	Jan., 1907	Great Britain, 1897
29. Newchwang ...	Shengking	May, 1864	Great Britain, 1858
30. Ningpo	Chekiang	May, 1861	Great Britain, 1842
31. Pakhoi	Kwangtung	April, 1877	Great Britain, 1876
32. Samshui	Kwangtung	June, 1897	Great Britain, 1897
33. Sansing	Kirin	July, 1909	Japan, 1905
34. Santuao	Fukien	May, 1899	Imperial Decree, 1898
35. Shanghai	Kiangsu	June, 1854	Great Britain, 1842
36. Shasi	Hupeh	Oct., 1896	Japan, 1895
37. Soochow	Kiangsu	Sept., 1896	Japan, 1895
38. Suifenho	Kirin	Feb., 1908	Japan, 1895
39. Swatow	Kwangtung	Jan., 1860	Great Britain, 1858
40. Szemao	Yunnan	Jan., 1897	France, 1895
41. Tatungkow ...	Shengking	March, 1907	Japan, 1903
42. Tengyueh	Yunnan	May, 1902	Great Britain, 1897
43. Tientsin	Chihli	May, 1861	Great Britain, 1860
44. Wenchow	Chekiang	April, 1877	Great Britain, 1858
45. Wuchow	Kwangsi	June, 1897	Great Britain, 1897
46. Wuhu	Anhui	April, 1877	Great Britain, 1876
47. Yatung*	Tibet	May, 1894	Great Britain, 1893
48. Yochow	Hunan	Nov., 1899	Imperial Decree, 1898

(1) By an Agreement dated May 30, 1907, Japan undertook to place the Dairen Customs under the control of the Maritime Customs.

(2) By an Agreement dated Dec. 2, 1905, Germany placed the Kiaochou Customs under the control of the Maritime Customs.

* No Customs Revenue is collected at Yatung.

B. Opened to Trade.—In addition to the "ports" mentioned the following places have been declared open to international trade:—

In Chihli		
Chihfeng		By Agreement with Japan, 1914
Dolonor		,, ,,
Kueihuacheng		,, ,,
Hulutao		,, ,,
Kalgan		,, ,,
In Mongolia		
Taonan		Japan, 1915
In Manchuria		
Moukden	(Shengking)	U.S., 1903
Fakumen	,,	Japan, 1905
Fenghuangcheng	,,	,, ,,
Hsinmintun	,,	,, ,,
Tiehling	,,	,, ,,
Tungkiangtze	,,	,, ,,
Yingkou (Port of Newchwang)	,,	
Liaoyang	,,	
Changchun (Kuanchengtze)	(Kirin)	Japan, 1905
Kirin	,,	,, ,,
Ninguta	,,	,, ,,
Chuitzuchien	,,	Japan, 1909
Toutaokou — Chientao	,,	,, ,,
Paitsaokou	,,	,, ,,
Tsitsihar	Heilungkiang	Japan, 1905
Hailar	,,	,, ,,
In Sinkiang		
Kashgar		Russia, 1860
In Shantung		
Choutsun		Imperial Decree, 1904
Lungkow		Japan, 1915
Tsinanfu		Imperial Decree, 1904
Weihaiwei		(Leased to Great Britain)
Weihsien		Imperial Decree, 1904
In Szechuan		
Wanhsien		Great Britain, 1902
In Kiangsu		
Woosung (near Shanghai)		Imperial Decree, 1898
In Kwangtung		
Hongkong		Ceded to Great Britain
Macao		Ceded to Portugal
Kwangchowwan		Leased to France
In Tibet		
Gartok, Gyangtze		Great Britain. Tibetan Treaty, September 7, 1904 (confirmed by China, April 27, 1906)

C. Ports of Call.—Ports at which foreign vessels may call and take on freight or passengers, or both, as specified.

I. YANGTZE STAGES		
a. Tatung (Anhui)	For Passenger and Cargo	By Chefoo Agreement, September 13, 1876
b. Anking ,,		
c. Hukow (Kiangsi)		
d. Wusueh (Hupeh)		
e. Lukikow(,,)		
f. Kiangyin (Kiangsu)	For Passengers	Yangtze Regulations, August, 1898
g. Icheng (,,)		
h. Huangchihkang (Hupeh)		
i. Huangchow (,,)		
II. WEST RIVER STAGES		
a. Kumchuk (Kwangtung)	For Passengers and Cargo	Burma Agreement, Feb., 1897
b. Shuihsing ,,		,, ,, ,, ,,
c. Paktau ,,		Mackay Treaty, Sept., 1902
d. Takhing ,,		Burma Agreement, Feb., 1897
e. Lating ,,		Mackay Treaty, Sept., 1902
f. Dosing ,,		,, ,, ,, ,,
g. Fungtsun ,,	For Passengers	Mackay Treaty, September, 1902
h. Kaukong ,,		
i. Yutshing ,,		
k. Lukpo ,,		
l. Howlik ,,		
m. Lutu ,,		
n. Maning ,,		
o. Yungan ,,		
p. Kulo ,,		
q. Jungki ,,		

The Foreign Trade of China

The factors affecting trade with China are so many and so diverse that any consideration of trade statistics would be incomplete without a thorough knowledge of them. These factors may be briefly stated as the price of silver, ship tonnage and freight rates, high prices of foreign articles, internal dissensions, and floods.

China is an importer of capital, and the purchasing power of the people directly depends upon the amount of money received from foreign sources, either in exchange for products or as remittances from relatives abroad. China is a silver-using country and most of those who sell to her are users of gold, so the relative price of silver in terms of gold money amounts to practically the relative purchasing power which the Chinese people exert.

On the other hand, as she must have a certain weight of silver for a certain weight of her produce, for all her costs are in silver metal, her exports depend upon the ability of her customers to pay the price for the silver required to purchase her goods.

As an example, in 1908 the value of the Haikwan Tael (which is only another way of saying a Chinese ounce of silver), was 65 cents in gold currency; therefore 65 cents in gold would purchase Chinese merchandise to the value of an ounce of silver, and it required an ounce of silver to purchase foreign merchandise valued at 65 cents in gold. But silver does not always remain at this price; in 1917 it had leaped to $1.03 in gold currency In one direction this benefitted the Chinese to an extraordinary extent, for a tael would then buy foreign merchandise to the value of $1.03 where ordinarily it would buy only 60 or 70 cents' worth; but on the other hand it might have wiped out China's export trade, for the buyer of Chinese goods in the gold standard countries was forced to pay $1.03 for each tael's worth of merchandise, which ordinarily he might have for 60 or 70 cents.

As China must depend upon her exports for new capital with which to buy foreign goods, it is evident that her export trade must be maintained if her purchases are to continue. Her exports have been maintained despite the high price of silver, but that has been due solely to the great demand for raw materials overseas. As the cost of Chinese merchandise in terms of gold money began to rise, the scarcity of raw materials and of labor abroad made the cost of raw material in Western countries take a similar course; and, quite fortunately for China, gold-using countries could still afford to buy her goods. On the other hand the increased value of Chinese currency did not greatly benefit the Chinese in buying abroad, for the reason that the advancing costs of foreign merchandise absorbed nearly all the difference in purchasing power.

As the complete story of exchange is told in another article, with tables and other data, it would be of no avail to go further into the question here. One more point may be of interest, and that is the natural wonder that arises as to the unchanging value of silver in China; for it might seem that if silver is worth more abroad that it would have a greater purchasing power in China. If high exchange continued for a number of years, and Chinese exports were therefore so high in price as to put them beyond the reach of gold-using countries, very likely the Chinese would be forced to content themselves with less silver and in the course of time this might make silver of higher purchasing value among Chinese. For the present, however, a tael of silver in China is worth exactly a tael of silver, and nothing more; instead of buying more, it is really buying less Chinese merchandise than it bought a few years ago, simply because the cost of living is increasing.

Passing on to the next question, that of the question of tonnage, it is not exactly fair to say that the increasing cost of merchandise abroad has absorbed nearly all the increased gold-value of the tael; it would be more precise to say that the laid-down cost of foreign merchandise in China has kept the gold-purchasing power of the tael at practically its old level. Freights to and from China have risen to great heights; trans-Pacific rates have risen from $8 or $12 gold per ton of cubic feet to $50 gold, and European freights have been $243 and more. An article in this issue on "Shipping During the War" goes into greater detail on the question of tonnage and rates.

Internal dissensions comprise the next factor in Chinese trade, and of internal dissension there has been no end since the founding of the Republic in 1911. The greatest strife since 1914 has been between the Provinces of the north and south, and while troops who formerly maintained a semblance of order have been away at war the country has been over-run with brigandage and other forms of lawlessness. Almost as bad, honest peasants and workmen have been taken from a life of productivity and put into the several Chinese armies, and having learned in the army something of organization, pilferage and the delights of idleness, many of them have taken up brigandage as a profitable occupation for all or part of their time. It has often been said that nobody fears the Chinese army more than the Chinese civilian, and for two years the soldier has been living well up to his reputation of disrupting trade, wasting and stealing. On top of the soldier blight have come the usual floods and pestilences, yet China has staggered through all of them. In fact, China seems to thrive on misfortune; a couple of national calamities, a few mobilizations of her armies, and a rebellion or so fit in very well with the scheme of things, each generation or so, and the period of reconstruction seems to benefit the people by stirring them to effort. Unfortunately the untoward occurrences have come too closely together in the past three or four years, and new inventions such as steamboats and railways have aided all too well in spreading disorder. In the olden days the Chinese could overtake calamity transmitted by junks and overland movements, but they have not yet learned to overcome destruction in the path of an army on a railway. Still, all the wars and floods of the past few years have only attained the end of keeping trade at a standstill; that is to say business has been as usual, and perhaps a bit better, where a few more years of amazing progress, such as had become the rule prior to 1914, would have been accomplished had the industrious Chinaman enjoyed a fair chance.

It is difficult briefly to sketch the political situation in China, but it can very well be summed up by saying that signs were never so hopeful of an early correction of all her mistakes, the foundation of a stable government, and of peace in the land. China has been drawn into the current of world events; she is in the Peace Conference, and all the other Governments there are greatly concerned in her conduct and welfare and undoubtedly will have much to say of Chinese affairs. Already the Allied Governments have addressed a communication to China urging a settlement of her internal disorder, and the Government is now arranging a peace conference between the factions of the North and South Probably the most profound characteristics of the Chinese are industry and love of peace, and the present disorder is a cruel anomaly which might be rectified by only a moderate amount of outside influence.

The most promising feature of the war-time trade of China does not lie in great increases, but in the fact that there has not been a decided decrease in a great many manufactures which could not be classed as the bare necessities of existence. For example the importation of cigarettes and cigarette-making materials increased steadily from 1908 to 1917, without once falling behind; the 1917 figures being about eight times those of 1908. Refined sugar has grown steadily until it has multiplied four times in the same period; and among the sundries a hundred items of lesser importance might be selected as showing similar increases. With the steady rise in prices abroad, the high freight rates, and the difficulty of securing manufactured articles, the constant demand for a great many articles is the surest sign that China's trade is built on a sound basis, not influenced by the passing conditions and vicissitudes of commerce.

Outstanding features of the China import trade are the preponderance of British trade and the importance of cotton piece-goods and yarn among the imports. The percentage of British trade in ten past years is given in the following table:—

Imports.—Value in million taels.

Great Britain and possessions.

	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Hongkong	150	150	171	148	147	171	166	148	153	158
British India	30	40	43	37	46	48	39	40	32	26
Great Britain	72	68	70	89	74	96	104	71	70	51
Canada	1	1	1	1	1	1	1	1	1	9
Australia and New Zealand	1	1	1	1	1	1	1	1	1	1
Total	254	260	286	276	269	317	311	261	257	245
Total imports into China	394	418	462	471	473	570	557	454	516	549
Per cent. of British imports	64	60	62	59	57	56	56	57	50	45

It will be noticed that the Hongkong figures are roughly half the imports listed as British. Hongkong is a free port and trades with all the ports in the world, being a transhipment point for a large part of Chinese imports and exports. The exact proportion of the Hongkong exports which are properly of British origin cannot be given in the absence of published statistics; but if British goods and goods of other countries which pass through Hongkong are in the same proportion there as at other ports in China, the division would be about equal. A significant change in the import trade has been the growth of the Japanese proportion. which has been brought about during the war by the Japanese control of shipping on the Pacific, the nearness of Japan to the market, by thorough organization, by Government aid, and by patience and energy. The percentage of Japanese trade has been as follows:—

Value in million taels.

Countries.	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Japan and Formosa ...	52	59	76	79	91	119	120	120	160	221
Chosen	1	2	2	2	3	3	4	6	8	11
Total	53	61	78	81	94	124	124	126	168	232
Total import into China	394	418	462	471	473	570	557	454	516	549
Per cent. of Japanese imports	13	15	18	17	20	22	22	28	33	42

The figures of total imports and exports from 1908 to 1917, showing the percentage held by the United States, is given in the following table:—

Years	Total imports.	Imports from United States	Per cent. of United States imports.	Total exports.	Exports to United States	Per cent. of United States exports.
	Hk. Tls.	Hk. Tls.		Hk. Tls.	Hk. Tls	
1908	.. 395.000.000	42.000.000	10.4	276.000.000	23,000,000	8.3
1909	... 418.000.000	33.000.000	7.7	339.000.000	33.000.000	9.5
1910	... 463.000.000	24.000.000	5.3	381.000.000	31.000.000	8.5
1911	... 472.000.000	40.000.000	8.7	377.000.000	34.000.000	9.0
1912	... 473.000.000	36.000 000	7.6	370.000.000	35.000.000	9.5
1913	... 570.000.000	35.000.000	6.2	403.000.000	38.000.000	9.3
1914	... 569.000.000	41.000.000	7.2	357 000.000	41.000.000	11.3
1915	... 455.000.000	36.000.000	8.2	420.000.000	61.000.000	14.5
1916	... 516.000.000	52.000.000	10.4	462.000.000	70.000.000	14.9
1917	... 549,000,000	61,000,000	11.1	463,000,000	95,000,000	20.5

The importance of cotton goods imports, which, roughly speaking, comprise one-third the total imports of China, is shown clearly in the following table of principal exports:—

Imports.—Value in million taels.

Articles.	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Cotton goods	110	137	130	143	144	182	183	149	136	158
Cigarettes and material ..	4	5	6	7	8	12	13	12	25	31
Rice	26	15	30	18	11	18	22	25	33	29
Sugar, refined	7	11	10	11	10	14	12	13	19	28
Metals and minerals ...	22	16	22	21	18	29	28	18	26	25
Kerosene, American ...	17	13	11	23	14	14	24	18	23	24
Coal	8	8	8	8	8	9	8	8	8	15
Leather	2	4	4	4	6	7	5	5	7	9
Sugar:										
Brown	7	7	5	4	5	9	7	7	8	7
White	4	6	5	5	7	10	9	7	6	6

Imports.—Value in million taels.

Articles.	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Opium	34	35	55	48	47	41	37	24	10	6
Cotton, raw	1	2	4	1	6	2	2	6	8	6
Kerosene, Sumatra ...	6	6	6	7	6	6	6	5	4	6
Machinery	6	5	10	5	5	6	8	4	6	5
Matches	5	5	5	5	7	6	5	5	7	5
Paper	2	3	4	4	3	6	5	4	8	5
Electrical materials ...	1	1	1	1	1	2	2	2	3	4
Soap	1	1	2	2	2	3	3	2	2	4
Miscellaneous piece goods	2	2	3	2	2	3	4	3	3	4
Clothing and hats ...	1	1	2	3	1	1	4	3	4	4
Woolen goods	4	3	4	4	5	4	3	2	2	3
Woolen and cotton mixtures	1	2	2	2	3	3	2	1	1	2
Sundries	125	133	134	144	156	183	177	131	167	163
Total	396	418	463	472	473	570	569	454	516	549



WORKING A LOCK ON THE GRAND CANAL. THIS VIEW ILLUSTRATES THE METHODS ADOPTED TO HAUL A JUNK THROUGH A LOCK. WIRE ROPES ARE ATTACHED TO THE JUNK AND ARE WOUND ON WINDLASSES BY THE COUNTRY PEOPLE

Total Custom Collections for 1918

The Maritime Customs Revenue for 1918 shows a decrease of over Haikwan Taels 1,850,000, the total collection being in round numbers Haikwan Taels 36,334,000 (at average exchange $5/3\frac{7}{16}$ equal to £9,603,908) as compared with Haikwan Taels 28,189.000 (at average exchange $4/3\frac{13}{16}$ equal to £8,244,448) in 1917. The following are in round numbers the collections at the prinpal ports:—

	Hk. Tls.	Hk. Tls.
Harbin	945,000	290,000†
Antung	893,000	206,000†
Dairen	3,562,000	473,000*
Tientsin and Chinwangtao ...	4,293,000	263,000†
Kiaochow	1,412,000	451,000†
Hankow	3.267,000	499,000†
Shanghai	10,903,000	311,000†
Swatow	916,000	45,000†
Canton	2,280,000	51,000†

The collection at Dairen is a record.

All foreign obligations secured on the Customs revenues were fully met to December 31, 1918.

The 1918 revenue of the Native Customs Houses under the Inspector-General's control shows an increase of over Haikwan Taels 196,000, the total collection reported being in round numbers Haikwan Taels 3,972,000 (at average exchange value $5/3\frac{7}{16}$ equal to £1,049,890) as compared with Haikwan Taels 3,775,000 (at average exchange $4/3\frac{13}{16}$ equal to £814,967) in 1917.

† decrease; * increase.

Distribution of China's Foreign Trade by Countries. Imports of Foreign Goods and Exports of Native Produce for the Years 1915, 1916 and 1917.

COUNTRY.	1915. IMPORTS	1915. EXPORTS	1916. IMPORTS	1916. EXPORTS	1917. IMPORTS	1917. EXPORTS
	Hk. Tls.	Hk. Tls.	Hk. Tls.	Hk. Tls.	Hk. Tls.	Hk. Tls.
Hongkong	148,436,189	104,169,938	153,347,624	119,485,650	158,602,488	115,842,946
Macao	5,246,635	4,949,546	5,136,244	3,696,572	4,654,092	4,939,469
French Indo-China	3,249,764	1.774,400	3,584,751	1,443,830	2,461,976	1,621,984
Siam	506,343	3,114,635	552,346	3,023,590	553,852	2,366,079
Singapore, Straits, etc.	5,381,386	8,893,040	4,602,845	8,348,735	6,877,792	6,674,852
Dutch Indies	6,726,728	2,735,793	5,320,322	2,334,736	4,515,641	1,713,778
British India	40,753,196	7,942,664	32,754,841	6,589,999	26,989,184	6,950,387
Turkey, Persia, Egypt, Aden, etc.	309,642	2,749,245	88,211	2,160,319	1 0,717	1,353,502
Great Britain	71,558,735	31,934,621	70,353,029	34,918,546	51,989,135	26,089,759
Norway	587,823	4,509	1,181,614	8,967	247,539	9,823
Sweden	926,565	221,676	1,588,004	1,449,297	340,113	1,680
Denmark	236,228	1,618,062	127,696	2,160,350	67,424	1,678,822
Germany	160,458	85	24,499	321	...	50
Netherlands	519,360	2,155,740	230,393	1,105,998	33,625	26,356
Belgium	3,464,707	...	7,704	...	7,597	..
France	2,430,599	30,470,688	2,837,884	27,261,959	2,309,160	25,536,079
Spain (including Gibraltar)	810	95,561	5,397	13,958	2,130	19,279
Portugal	286	1,090	...	307	...	...
Switzerland	16,016	373	482	1,468	662	3,695
Italy	414,182	9,340,675	359,936	6,305,978	467,999	3,905,824
Austria and Hungary	73,416	31	23,747	88	1,035	...
Russia, European Ports	29,335	4,550,878	56,696	4,222,617	35,679	477,813
,, and Siberia by land frontier	6,790,294	6,246,169	6,735,186	20,444,813	2,933,515	13,438,274
,, Amur Ports	453,384	6,252,791	314,505	3,790,230	154,193	7,085,862
,, Pacific Ports	9,754,190	42,348,810	18,588,221	37,056,545	8,094,348	28,748,557
Korea	6,446,167	5,658,643	8,504,624	6,601,511	11,843,006	8,518,934
Japan (including Formosa)	120,249,514	77,676,817	160,490,720	112,922,258	221,666,891	105,773,819
Philippine Islands	3,644,483	787,705	2,292,875	1,075,037	1,706,679	1,362,285
Canada	886,263	1,465,226	1,868,295	1,539,163	9,094,347	2,686,522
United States of America (including Hawaii)	37,043,449	60,579,257	53,823,799	72,080,705	60,960,777	94,786,229
Mexico and Central America (including Panama)	133	1,035	37	949	38,688	5,178
South America	6	45,377	5	86,537	11	44,532
Australia, New Zealand, etc.	767,704	1,030,832	465,772	1,614,891	585,205	1,027,370
South Africa (including Mauritius)	15	45,252	122	51,442	15,839	41,891
DIRECT GROSS IMPORT	477,064,005		535,268,426		577,381,339	
Re-exported Abroad	22,588,286		18,861,431		27,862,565	
TOTAL NET IMPORT	454,475,719		516,406,995		549,518,774	
TOTAL EXPORT		418,861,164		481,797,366		462,931,630

China Navigation Co.'s Services

The China Navigation Company has a large fleet of vessels built for the China coastal and river trades with headquarters at Shanghai and Hongkong under the management of Messrs. Butterfield & Swire (John Swire & Son, Ltd).

Their services in the North are to and from Tientsin (for Peking), Newchwang, Dalny and Antung (for Manchuria), Weihaiwei, Chefoo and Tsingtao.

In Central China their lines run to and from Hankow, Ichang, Changsha and all Yangtze ports, with transhipment facilities for Chungking and the Central Provinces.

In South China their lines run to and from Canton and other Southern ports; the Philippine Islands; Bangkok; and Singapore.

The Company has extensive storage accommodation on both sides of the river at Shanghai and warehouses and transhipment facilities at all China Ports.

Blue Funnel Line.—The Ocean Steamship Company and the China Mutual Steam Navigation Company form the "Blue Funnel Line" operating between China, Japan, the Philippines, the Straits Settlements, and British, European, and Pacific and East Coast ports of the United States. They have direct loadings to and from all main shipping trade centres in China, Japan, the Philippines and Straits Settlements. Messrs. Butterfield & Swire (John Swire & Sons, Ltd.) of Hongkong and Shanghai are the general agents in the Far East.

Holt's Wharves.—At Shanghai, Hongkong and Hankow Holt's Wharves are especially adapted for the berthing of ocean steamers and have extensive permanent and modern storage accommodation in warehouses of reinforced concrete construction equipped with electric cargo elevators, in addition to lofty transit sheds for transhipment cargo for which the wharves possess handling and forwarding facilities to all Far Eastern ports. The wharves are under the management of Messrs. Butterfield & Swire, general agents in the Far East for the Blue Funnel Line.

Tientsin Lighter Co.—The port of Tientsin being cut off from direct connection for ocean steamers by the limited depth of the Haiho River, cargo destined for Tientsin is discharged into lighters at Taku Bar and towed thence to destination, a distance of 40 miles.

The Tientsin Lighter Co. has a fleet of powerful tugs and lighters specially adapted for the needs of the port. The management of the fleet is in the hands of Messrs. Butterfield and Swire.



THE TALLYMAN

Principal Chinese Imports and Exports in 1917

The following tables list the principal items of import and export through all Chinese ports in 1917, with Chinese weights converted to foreign units and the tael valuation in gold currency at the average rate of exchange for the year:—

IMPORTS.

Articles.		Quantity.	Value. Gold $
Arms and ammunition		—	169,862
Automobiles		—	932,838
Bags	number	46,947,016	5,783,821
Beans, peas, etc.	tons	65,290	2,512,196
Belting, machine		—	340,970
Butter (including ghee)	pounds	945,867	418,274
Candles	do.	5,985,867	843,363
Canvas and cotton duck	yards	2,693,937	717,381
Chemical products (except medicines, match-making materials, and soda)		—	1,807,093
China and earthenware		—	1,531,644
Clocks and watches	number	338,279	677,157
Clothing, hats, gloves, etc. (except hosiery, shoes, and haberdashery)		—	4,444,901
Coal	tons	1,444,124	15,342,671
Confectionery (except chocolate)		—	201,633
Cordage	pounds	5,784,267	555,971
Copper:			
Bars, rods, sheets, plates, and wire	tons	688	476,113
Ingots and slabs	do.	1,844	1,158,373
Cotton goods:			
Blankets	number	747,136	620,366
Cambrics, lawns, and muslins, white, dyed, or printed	pieces	281,148	999,413
Drills	do.	1,435,455	5,639,017
Flannelettes	do.	1,027,557	3,755,747
Handkerchiefs	dozens	1,317,793	552,001
Italians, venetians, and lastings, plain, fast black	pieces	1,181,184	7,491,093
Italians, venetians, poplins, and lastings:			
Colored	pieces	1,181,640	6,023,773
Figured	do.	667,229	4,874,537
Jeans	do.	1,625,518	5,639,017
Prints plain	do.	1,493,630	4,665,959
Sheetings	do.	2,739,209	10,227,131
Shirtings:			
Gray	do.	3,160,872	10,564,315
White	do.	2,622,911	12,902,652
T-cloths	do.	1,360,816	3,550,997
Velvets and velveteens	yards	3,798,589	1,145,353
Yarn	pounds	271,364,133	61,345,662
Cotton, raw	do.	40,017,667	6,534,348
Dyes, colors, and paints:			
Paint and paint oil		—	1,237,647
All other		—	2,513,904
Electrical materials and fittings		—	4,107,788
Enameled ware		—	786,137
Fish and fishery products		—	14,427,670
Flour	do.	90,513,200	2,874,947
Fruits, dried		—	865,614
Furniture, and materials for		—	1,033,723
Gasoline, benzine, etc.	gallons	1,123,695	562,140
Ginseng	pounds	507,664	5,275,733
Glass and glassware:			
Window	boxes	163,392	1,626,181
All other		—	852,558
Haberdashery		—	477,306
Hemp	tons	523	263,262
Hosiery	dozen	2,544,943	2,750,601
Instruments, musical		—	694,106
Iron and steel, and manufactures of:			
Bars	tons	15,330	1,559,594
Cobbles and wire shorts	do.	6,694	484,321
Hoops	do.	5,999	810,182
Lamps and lampware		—	899,499
Machinery and fittings		—	5,369,242
Nails and rivets	do.	20,054	2,466,390
Pig and kentledge	do.	5,634	345,881
Pipes and tubes	do.	12,404	1,712,161
Plate cuttings	do.	3,417	293,371
Rails	do.	10,565	747,095
Sheets and plates, n.e.s.	do.	16,943	2,174,136
Sheets, galvanized	do.	1,763	404,576
Stoves and grates		—	83,073
Wire, n.e.s.	tons	1,637	238,637
Lead pigs and bars	do.	5,205	999,886
Leather	pounds	17,666,533	9,881,795
Imitation and cloth		—	151,993
Leather:			
Manufactures of (except boots, shoes, and gloves)		—	250,703
Lumber:			
Hardwood	cubic feet	2,836,412	1,511,968
Softwood	sq. feet	77,935,786	2,976,981
Machines, knitting, sewing, and embroidery		—	440,553
Matches	gross	15,594,320	5,666,552
Match-making materials		—	1,422,148
Medicines		—	5,810,050
Milk, condensed	dozens	455,502	853,832
Needles	thousands	1,155,038	1,073,485
Oils:			
Kerosene—			
American	gallons	107,446,239	24,529,885
Borneo	do.	9,777,614	1,798,733
Japanese	do.	5,430,593	1,312,099
Russian	do.	300,679	106,832
Sumatran	do.	33,633,346	6,071,156
Lubricating	do.	3,287,494	1,162,392
Opium	pounds	142,924	6,366,831
Paper		—	6,374,279
Perfumery and cosmetics		—	1,024,551
Photographic materials		—	531,550
Printing and lithographic material		—	479,248
Railway materials:			
Railway and street cars		—	1,222,696
Locomotives and tenders		—	3,649,676
Sleepers	number	1,051,241	1,106,157
Rice and paddy	tons	658,812	30,176,773
Safes and strong doors		—	101,974
Scales and balances		—	96,477
Seeds		—	654,296
Shoes and boots, leather	pairs	432,968	1,260,453
Soap, and materials for		—	3,755,566
Shooks for casks		—	1,147,893
Soda	tons	14,402	866,477
Stationery (not including paper)		—	999,396
Stores, household		—	1,754,849
Sugar:			
Brown	tons	125,367	7,935,547
White	do.	74,074	6,941,666
Refined	do.	198,691	28,524,975
Confectioners'	do.	15,007	2,280,690
Tea	pounds	25,259,200	4,565,729
Telephone and telegraph materials		—	662,501
Tin in slabs	tons	2,866	2,623,542
Tobacco, and manufactures of:			
Cigarettes	thousands	7,909,103	31,888,287
Cigars	do.	39,343	601,327
Tobacco	pounds	20,523,600	3,720,216
Toilet requisites		—	747,429
Umbrellas	number	2,546,684	1,268,583
Wax, paraffin	tons	14,244	2,637,055
Wines, beer, spirits, etc.:			
Beer and porter		—	951,742
Spirits		—	693,081
Wines		—	1,186,081
Woolen goods:			
Blankets and rugs	pounds	169,118	174,352
Coatings and suitings	yards	971,796	1,589,451
Woolen and worsted yarn and cord	pounds	831,733	1,370,443
Woolen and cotton unions:			
Alpacas, lusters, and orleans	yards	741,305	346,111
Coatings and suitings	do.	1,189,446	1,149,946
All other articles		—	88,772,554
Total net imports		—	560,509,150

EXPORTS.

Articles.		Quantity.	Value. Gold $
Animals:			
Cattle, sheep, goats, and pigs	number	346,437	3,701,964
Horses, asses, and mules	do.	1,134	37,799
Poultry	do.	3,150,532	737,611
Bags	do.	7,342,492	562,387
Beans	tons	667,190	19,994,600
Breadstuffs:			
Bran	do.	34,578	439,266
Wheat	do.	103,840	3,342,333
Bristles	pounds	8,557,467	6,295,071
Chinaware, earthenware, and pottery		—	2,504,879
Coal	tons	1,575,627	6,402,090
Cotton:			
Raw	pounds	110,995,067	20,436,579
Nankeens	do.	6,518,267	2,970,618

Articles.		Quantity.	Value. Gold $
Eggs :			
Albumen and yolk	pounds	54,002,533	12,239,678
Fresh and preserved	dozen	20,616,666	1,907,703
Frozen	pounds	4,756,133	457,051
Feathers, fowl, etc.	do.	7,083,333	819,578
Fibers :			
Hemp	do.	15,166,482	1,678,192
Jute	do.	11,339,333	460,974
Ramie	do.	28,246,962	3,654,057
Firecrackers and fireworks		—	2,773,439
Fish and fishery products	tons	9,343	1,811,996
Flour	pounds	106,404,133	2,338,230
Fruits :			
Fresh	do.	27,228,400	447,033
Dried	do.	—	590,418
Galls	do.	5,534,133	914,533
Ginger		—	133,965
Glassware, bangles, etc.		—	311,737
Grass cloth	pounds	2,104,400	1,979,261
Groundnuts	tons	31,421	2,052,105
Hair, all kinds	pounds	5,104,667	955,369
Hats :			
Rush	number	2,095,241	72,434
Wood shaving or chip	do.	341,964	13,910
Indigo, liquid	pounds	10,419,733	668,759
Leather	do.	6,199,600	3,121,261
Lily, flowers, dried	do.	3,897,333	316,961
Lumber		—	2,146,442
Mats	number	32,606,770	1,946,614
Matting	rolls	72,124	561,391
Meats :			
Fresh and frozen	pounds	52,736,133	3,043,765
Preserved and prepared	do.	9,700,533	1,191,731
Poultry and game	do.	7,282,533	586,383
Medicines		—	3,396,699
Minerals :			
Antimony—			
Regulus and crude	tons	38,539	6,182,385
Ore	do.	4,254	242,456
Copper ingots and slabs	do.	45,988	10,145,691
Iron—			
Pig	do.	162,194	5,304,562
Ore	do.	340,878	1,038,848
Lead	do.	825	167,699
Lead ore	do	423,655	790,152
Quicksilver		—	779,965
Tin in labs	tons	13,038	12,448,975
Zinc—			
Ore	do.	251	7,268
Spelter	do.	476	116,958
Musk	ounces	21,272	544,592
Oils :			
Bean	pounds	252,180,400	18,560,050
Essential	do.	1,334,533	863,931
Peanut	do.	61,807,067	5,293,637
Wood	do.	53,514,800	4,932,626
Paper	do.	32,385,467	3,267,144
Samshu (native wine)	gallons	1,460,750	497,086
Seeds :			
Apricot	tons	1,220	284,927
Cotton	do.	24,692	468,087
Melon	do.	2,828	370,384
Rape	do.	28,713	1,622,649
Sesame	do.	14,880	1,122,546
Seed cake	do.	70,862	1,545,855
Silk and manufactures of :			
Raw, white—			
Reeled and re-reeled	pounds	2,491,733	12,088,317
Filature	do.	9,200,400	54,367,286
Wild	do.	2,431,467	6,133,228
Raw, yellow	do.	2,652,400	8,142,754
Cocoons	do.	4,483,067	1,894,651
Waste	do.	15,310,400	6,635,517
Cocoons, refuse	do.	3,707,600	688,541
Piece goods	do.	1,730,800	11,122,637
Pongees	do.	2,297,067	6,451,724
All other		—	772,833
Skins and hides :			
Cow and buffalo	pounds	63,613,200	17,714,923
Goat, untanned	number	11,735,579	8,056,150
Horse, ass, and mule	pounds	4,100,933	717,909
Sheep	number	1,721,823	985,918
Skins, dressed :			
Goat, untanned	number	425,291	440,178
Lamb	do.	173,941	196,887
Skins, dressed, made up :			
Dog—clothing, mats, and rugs	do.	389,275	362,387
Goat—clothing, mats, and rugs	do.	71,354	93,748
Kid—clothing	do.	46,018	56,478
Lamb—clothing	do.	48,067	131,839
Sheep—mats and rugs	do.	31,827	43,618
Skins, fur, dressed and undressed :			
Fox	number	15,093	82,191
Marmot	do.	272,623	64,892
Raccoon	do.	79,683	51,879
Weasel	do.	627,748	130,972
Straw braid	pounds	5,403,200	2,454,817
Sugar, including confectioners' and cane	tons	30,758	1,567,968
Tallow :			
Animal	pounds	35,961,067	4,006,549
Vegetable	do	20,184,667	1,818,597
Tea :			
Black	do.	63,169,600	12,643,738
Green	do.	26,145,733	9,145,434
Brick—			
Black	do.	29,776,933	5,061,572
Green	do.	29,374,533	2,696,683
Dust and tablet	do.	1,785,200	239,964
Tobacco, and manufactures of :			
Cigarettes	do.	1,676,933	869,648
Leaf and prepared	do.	23,816,800	3,602,730
Varnish		—	663,752
Vegetables, n.e.s.		—	1,590,364
Wool :			
Camel's	pounds	4,497,567	1,323,962
Goat's	do.	1,818,800	478,819
Sheep's	do.	45,247,200	10,743,680
All other articles		—	79,149,032
Total		—	472,190,262



CARRYING CHINESE MAILS OVER A DIFFICULT MOUNTAIN TRAIL ON TWO BAMBOOS, KWEICHOW



A TYPICAL CHINESE CART CARRYING MAILS, CHIHLI

The Trade Routes of China

We have already seen that the waterways of China are the principal means of communication. Two of these, the Yangtze and the Sikiang, have been opened to steam traffic, and of these the Yangtze is the carrier of something more than half the inward and outward traffic which concerns foreigners. Beyond the great



TRANSPORTATION OF COTTON BY WHEELBARROWS, HUPEH

rivers lie innumerable smaller streams and thousands of miles of canals, all of which teem with native craft of all descriptions and are the greatest carriers of internal commerce; but back of all the water transportation are the overland routes. Ultimately, in the case of imports, and originally, in the case of exports, the bulk of the huge trade of China is road-borne. Some of the routes, known as Imperial, or courier roads, are of great antiquity, and were one time well-made highways; but as for the remainder of the land lines of communication very little can be said except that they cannot be classed as roads, but are mere rude paths or tracks, meandering through the country. The peculiarity of Chinese main roads is that nearly all were built for military purposes, thousands of years ago, when the Chinese were of a more virile strain. Peking is their starting point, and from Peking they radiate to the outlying territories of the south, west and north, and eastwardly to the coast. When the Manchus came they concerned themselves greatly with the suppression of rebellion among the Chinese, and put into use those roads running through the Eighteen Provinces for the establishment and supply of numerous Manchu garrisons but the Chinese gradually absorbed the Manchus by peaceful methods and the roads during their effete *regimé* from 1644 to 1911 fell into disrepair worse than had been known before, but they are still largely used by burden coolies who pack heavy loads on their shoulders or sling them on either end of bamboos, by camel caravans, by the Chinese wheelbarrow pushed by a coolie or pulled by mule, or aided by sails, by the springless Peking cart with its great wheels which weigh as much as the body and are the only sort of wheel which could stand the strain, and in the way of passenger transportation by sedan-chairs or litters on the shoulders of coolies or swung between two donkeys or mules.

The great connecting link between the western section of the Hwang Ho (Yellow River) and the Upper Yangtze is the road which extends from Peking by way of Taiyuanfu to Sianfu, the ancient capital of China, and to Chengtu, the capital of Szechuan; with a continuation into Tibet. It is the only existing means of communication by land between the northern provinces and those of the southwest, and Tibet. This is the road over which Marco Polo traveled in the 13th century, and of which he spoke in high praise. Incidentally, it is the route of a projected railway, which would go beyond Chengtu to Yunnanfu. In Shensi it serves as a link connecting the Wei Basin, Kansu province and Eastern Turkestan with east China; in the valley of the Upper Han it has a river outlet to Hankow; at Chengtu it connects with roads leading to Tibet, and to Chungking and Wanhsien on the Yangtze. It may be safely said that this great road serves a population equal to that of the whole United States.

As Peking is now connected by rail with Taiyuanfu, the portion of the highway between these two cities is now only useful for local traffic. From Taiyuanfu to Chengtu, a distance of 1,200 miles, it is used for through traffic. The road is naturally divided into two nearly equal sections at Fengsiangfu; to the north carts compete with coolies to their virtual displacement, but due to the rugged mountainous character of the southern portion coolies take up the burden till the mountain passes are crossed and the densely populated and expansive Chengtu plain is reached, where the water buffalo is the beast of burden as he is naturally the only animal that can be worked in the rice-fields there.

By mule litter one can go from Taiyuanfu to Sianfu, a distance of 400 miles, in 16 days. A mule litter, with two mules, an extra mule for baggage and a donkey for servants to ride, costs, with the muleteer, about 5 cents a mile. One can travel by sedan-chair borne by four coolies from Sianfu to Chengtu, a distance of 720 miles, in 24 days, making an average of 30 miles a day. A sedan-chair, with two extra baggage coolies, costs about 3 cents per mile.

Yet despite what would be considered absolutely prohibitive transportation rates abroad, there are to be seen daily on this great highway in western China thousands of carts, thousands of pack animals, and thousands of carrying coolies, engaged in transporting cargo. It is difficult to imagine a people in greater need of railways than those along this route. At one place a traveler passed a caravan of 30 donkeys each laden with 250 pounds of pig iron, traveling 30 miles a day and bound from Hanchungfu to Lanchowfu, a distance of 700 miles.

The other road from Peking to the west extends from Sianfu, mentioned above, to Lanchow and so through the Gobi Desert to Turkestan, with a branch to Lhasa, the capital of Tibet. In ancient times it was the only means of communication with the outlying western territories.

The imperial highways from Peking towards the North are as follow:

From Peking to Tungchow, a distance of 10 miles, formerly paved with great slabs of stone, which within the past year have been removed to make way for a modern motor road, thence to Moukden by way of Yungping and Shanhaikwan, at the latter point passing through the Great Wall. This is the route which is now followed, roughly speaking, by the Peking-Moukden Railway, which connects with the great Trans-Continental Railway route



PRIMITIVE MEANS OF TRANSPORTING FARM PRODUCE

to Europe. An extension of this route goes to Jehol and Tsitsihar, thence to Mergen and Aigun. The proposed Chinchow-Aigun Railway would follow the same route over much of its way.

Another great road runs from Peking to Dolonor and Khailar, in Inner Mongolia, with an alternate route via Kalgan. A railway now runs from Peking to Kalgan. At Kalgan begins a most important road—the highway to Kiakhta by way of Urga. It has been used for communication with Russia since the time of Peter



CONVEYING MERCHANDISE TO URGA, MONGOLIA

the Great, and has been the great route for camel caravans to that part of Siberia lying south of Lake Baikal. Motor cars are now being tried out extensively in this region.* Caravans from Mongolia and Siberia still come to Peking, although a great number end their journey at Kalgan where the railway takes up the burden. At Kalgan another important caravan route runs through Kweihwating to Semipalatinsk. A railway now extends from Peking to Fengchen, a town within 50 miles of Kweihwating. This route offers a straight line to the heart of Russia; after Kobdo is passed there is an easy descent through the valley of the Irtish, on which Semipalatinsk is situated.

Next in importance are the lines to the south. Among the roads mentioned is the continuation of the Great Western Highway; and it is interesting to note that its route is also the route of a railway now under contract, which will extend from Chengtu to Yunnanfu. From Peking a highway extends to Yunnanfu by way of Chengtingfu, Kaifengfu, Siangyang, Kingchowfu, Changtehfu, and Kweiyang. From Yunnanfu to Mengtze (on the Tongking frontier) it continues to Hanoi in Tongking, though a railway also covers this journey; and another continuation extends to Bhamo, on the Yunnan-Burma frontier,† viâ Talifu. From Kaifengfu the road has a branch to Kweilin, the capital of Kwangsi province, by way of Hankow and Yochow; and from Hankow the road extends to Canton. The Peking-Hankow Railway follows roughly the same line north of the Yangtze, and the line now under construction from Hankow to Canton will do the same south of the river.



Photo: Roy Chapman Andrews

A DUGOUT AS A FERRY ON THE YALU RIVER, N.W. KOREA

The last of the great lines to the south runs to Canton by way of Tehchowfu, Hsuchowfu, Luchowfu, Kiukiang and Nanchangfu. This highway is commonly known as the "Ambassadors' Road." It follows the Grand Canal on its northern portion, leaving that waterway at Hsuchowfu, in Kiangsu; and its route into Kwangtung is over the famous Meiling Pass.

The important route to the east is the one last described except that it continues along the Grand Canal to Chinkiang, where there is an important loop to Nanking, and continues along the Canal to Hangchow. From Hangchow it goes to Swatow by way of Wenchow, Santuao, Foochow, and Amoy. This route is that taken by the Tientsin-Pukow Railway to Nanking, the Shanghai-Nanking Railway, the Shanghai-Hangchow-Ningpo Railway, and the projected coast railways to Canton.

Among the important imperial highways which do not start at Peking may be mentioned that from Chengtu (the capital of Szechuan) to Nanking by way of Wanhsien, Ichang, Hankow, Anking (where the Yangtze is crossed), Tatung and Wuhu; from Tsinanfu, the capital of Shantung, to Choutsun, Chefoo and Weihaiwei, and to Weihsien and Tsingtao; and last, but by no means the least, the ancient route by which teas were taken from Hankow to the Russian frontier by way of Siangyang, Sianfu, Lanchowfu, Hami and Lake Zeisan.

It is interesting that railways now constructed and those which are projected largely follow these ancient routes. When surveys are undertaken for new lines, it is usually ascertained that the coolies who toiled along the paths with heavy burdens in bygone ages found the line of least resistance, and as that is the ideal for which the modern engineer is seeking the railway goes the same way. In addition, of course, commerce has developed along the routes.



PACK TRAINS MEETING AT A PASSING POINT IN ONE OF THE LOESS ROADS OF SHANSI

It can be said of Chinese main roads, generally, that the smoothness of the paving stones, where they exist, make travel over them risky and slow, while misplaced and sunken stones produce an uneven surface which makes travel impossible for miles of the length even in good weather. The fact is that the real road of commerce often runs outside the borders of the proper highway, for a path a few inches wide will suffice for the single wheel of the barrow or the sure feet of a burden coolie or mule or donkey. Despite all this, they are an important part of the means of internal transportation of China, and bear an enormous amount of traffic. The cost of such transportation is staggering to the foreigner accustomed to transportation costs in foreign countries. Taking coolie transportation, the average load is about 125 pounds, though some coolies carry up to 200-lbs. and about 15 miles a day can be made; so a load of 20 tons for 15 miles, for example, would require 300 men at a total cost of $21. An ordinary freight car would carry the load the same distance in an hour, at a cost about one-tenth as much. Where labor is 6 or 7 cents a day the cost of transporting a ton of wheat over the Great Western Highway would be at least $50. The cost of transportating a ton of wheat from Chicago to New York is about one-seventeenth that sum.

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* See FAR EASTERN REVIEW, November, 1918, "Across Mongolia by Motor Car."

† See FAR EASTERN REVIEW, January, 1919, "Across Little Known Yunnan."

The Great Trade Artery of China

The Yangtze River and its Trading Ports

The great river of China and one of the great streams of the world is the Yangtze. It divides the country into two nearly equal sections, with eight of the provinces on the north and eight on the south, while the two provinces of Anhwei and Kiangsi lie partly on both sides of its banks. The Yangtze rises



A YANGTZE LANDING STAGE, NANKING (RAILWAY PONTOON)

in the Tangla Mountains in Northeastern Tibet and runs 3,200 miles to the Yellow Sea. It drains an area estimated at from three-quarters of a million to one million square miles and discharges from a quarter million to three million cubic feet of water per second; its drainage basin includes the provinces of Szechuan, Kweichow, Hupeh, Hunan, Kiangsi, Anhui and Kiangsu, and portions of Kansu, Yunnan and Shensi, whose population is estimated at 200 millions, or half the population of the vast territory known as China.

The upper 1,600 miles from Tibet to a point above Suifu, in Szechuan, is torrential and almost unknown. It has been ascertained that it rises on the southeast edge of the Central Asian steppes, and its course above Suifu is known to be largely hemmed in by parallel ranges through which it rages through gigantic rifts culminating in grandeur at the Sun Bridge, a mountain about 20,000 feet in altitude, which a traveler found to abut on the stream in a precipice which he thought must be 8,000 feet above its waters. It is when these savage gorges are passed and the river reaches Pingshan, a city some 40 miles above Suifu at about long. 104, that it becomes serviceable to man. In travelling from its supposed source to Pingshan, a distance roughly estimated at 1,500 miles, its fall must be fully 15,000 feet, while for the same distance (again roughly estimated) from Pingshan to Shanghai the fall is only 1,025 feet. From Hankow to the sea, a distance of 600 miles, its fall is only an inch per mile.

From Suifu to Ichang the river varies greatly in width, passes through numerous gorges and has many dangerous rapids, and between these two cities is the important treaty port of Chungking, where the River Kia makes a junction with the Yangtze. Below Ichang, which owes its importance to its position at the emergence of the river from the gorges, navigation is normal and continues throughout the year, whereas between Chungking and Ichang the great variations in the water level (as much as 100 feet at Chungking has been recorded) make that section difficult and dangerous, both at low and high waters. Steam navigation is carried on between Ichang and Chungking, although with some difficulty, and a short history of the efforts toward establishing a steam trade route between these two markets is given in the description of Chungking.

Ichang is 1,000 miles from the mouth. Fifty miles further down is Shasi, at which point dykes commence and are continued with a few breaks in the hilly parts, down to the sea. At Yochow, a treaty port about 200 miles below Ichang, a large volume of water enters from Tungting Lake and its feeders, and the important city of Changsha is served by this water connection. Next comes Hankow, some 600 miles from the sea, at which place the waters of the Han discharge into the Yangtze.

From Hankow to the sea navigation is possible at all times of the year for coasting vessels, and in the summer for seagoing craft. Below Hankow is Kiukiang, where the Poyang Lake pours its waters into its stream.

Then follow the cities of Wuhu and Nanking. The river now is from one to five miles wide and contains numerous shoals and islands. It is at Chinkiang where it finally emerges from the hills, and thence to the sea there is an enormous delta. Joining its mouth a small stream, the Whangpoo, gives access to Shanghai.

Bifurcating behind a long island (Tsungming), which has appeared from the waters during the Christian era, the river enters the sea with a width of some forty miles and annually pours forth silt estimated at six billion cubic feet, solid stuff enough to build an island 90 feet in depth and a mile square annually, which is gradually extending the coast.

This main artery of China bisects a region approximately three times the size of Germany having about as dense a population, being similar to that of the industrial regions of the New England states of America. The first 1,500 miles is not navigable, but as the surrounding country is rugged and mountainous and sparsely settled it is economically of minor importance at present The middle section of the river, roundly 700 miles, is a highway for heavy junk traffic and is not impassible for specially adapted steam craft: this is the route through which the products of Szechuan, one of the richest but least exploited of the Eighteen Provinces, and its hinterland reach their market. The lower



A HULK AT NANKING SHOWING HOW OLD VESSELS ARE USED IN PORTS WHERE IT IS IMPRACTICABLE TO BUILD WHARVES FOR LOADING AND UNLOADING RIVER STEAMERS

section of the Yangtze, more than 1,000 miles, is navigable by steamers of considerable size. From Ichang, in Hupeh, to Hankow there is a stretch of 387 miles carrying a steam traffic up to 1,000 tons; but between the great trade centre of Hankow and the Yellow Sea—585 miles—any sized ocean steamer may ascend the river during high water season. Yangtze line traffic between Shanghai and Hankow, employing tonnage up to 4,000 practically the whole year, is highly competitive on this section.



ANKING—A PORT OF CALL ON THE YANGTZE

Pilotage on the Yangtze is conducted as follows: Ocean-going steamers, carrying cargoes to Hankow, obtain the services of the Woosung-Hankow Pilots Association, and charges are made according to tonnage and draft. The local steamship lines employ Chinese pilots, the night pilots being paid a salary of Mex. 150 per month and the day pilots $110. The wages of foreigners formerly employed were about three times those now paid the Chinese. The Chinese pilots are trained by the local steamship companies and are taken from the river lorchas. They keep in touch with one another, passing messages back and forth, regarding the changes in the character of the river.

Along the main river and its economically important branches are 11 treaty ports—Shanghai, Chinkiang, Nanking, Wuhu, Kiukiang, Hankow, Yochow, Changsha, Shasi, Ichang and Chungking—where foreigners may dwell and trade, and nine places, which although not wholly open to foreign trade from an administrative standpoint, have the status of open ports. These nine ports are Changteh and Siangtan in Hunan; Wusueh in Hupeh; Hukow, Nanchang and Wuchang in Kiangsi; Tatung and Anking in Anhwei; and Tungchow in Kiangsu.

These places represent the distributing points and entrepots of the Yangtze.

Distribution of Trade

Occupying a position on the Yangtze strikingly similar to that of New Orleans at the foot of the Mississippi Valley, Shanghai has acted as the clearing-house for Central China trade. From this centre of foreign trade and finance, the imports from overseas are transhipped for distribution up and down the coast and through the length of the Yangtze Valley. In the same way the products of China's central provinces have flowed toward Shanghai for exportation. On the other hand, the strategic position of Hankow 600 miles up the Yangtze River makes it the collection point—for the future, as well as to-day—for the commerce of this heart of China; here the re-shipments from Shanghai are finally distributed by reason of Hankow's unique location as the junction of China's present and future railway lines in the interior, and because of river conditions making it the terminus of general steam navigation. Thus Shanghai and Hankow are economic complements, mutually dependent on each other. While at present Shanghai dominates the trade situation, future developments are bound to enhance the commercial and industrial position of Hankow at the expense of the sea coast mart.

Taking the direct foreign trade of the treaty ports and markets open to trade, in 1917 out of a total commerce of Hk. Tls. 1,012,450,404 Shanghai's amounted to about two-fifths of the whole. That of Hankow was only one-eighth the volume of Shanghai's direct foreign trade, but Hankow, in comparison to such ports as Tientsin and Canton, did five-sevenths and seven-elevenths as much direct foreign trade respectively under heavy disadvantages. So much for the relation of the Yangtze to the total China trade.

Let us now consider the relative importance of the Yangtze trade centres. The combined trade of these places is a little more than half the total whole trade of China's ports. Its distribution among the Yangtze ports, falling into the three geographical divisions noted, follows:—

THE WHOLE TRADE OF THE YANGTZE PORTS BY GEOGRAPHIC DIVISIONS.

Port.	Trade in Hk. Tls.	Group.
Shanghai	276,411,418	
Chinkiang	18,014,171	Lower River
Nanking	22,895,022	
Wuhu	19,447,194	
Kiukiang	41,936,034	
Hankow	170,730,067	
Yochow	7,474,529	Central
Changsha	27,492,228	Yangtze
Shasi	4,422,849	
Ichang	5,685,589	Upper River
Wanhsien	1,786,949	
Chungking	33,592,533	
Total Hk. Tls.	629,898,583	

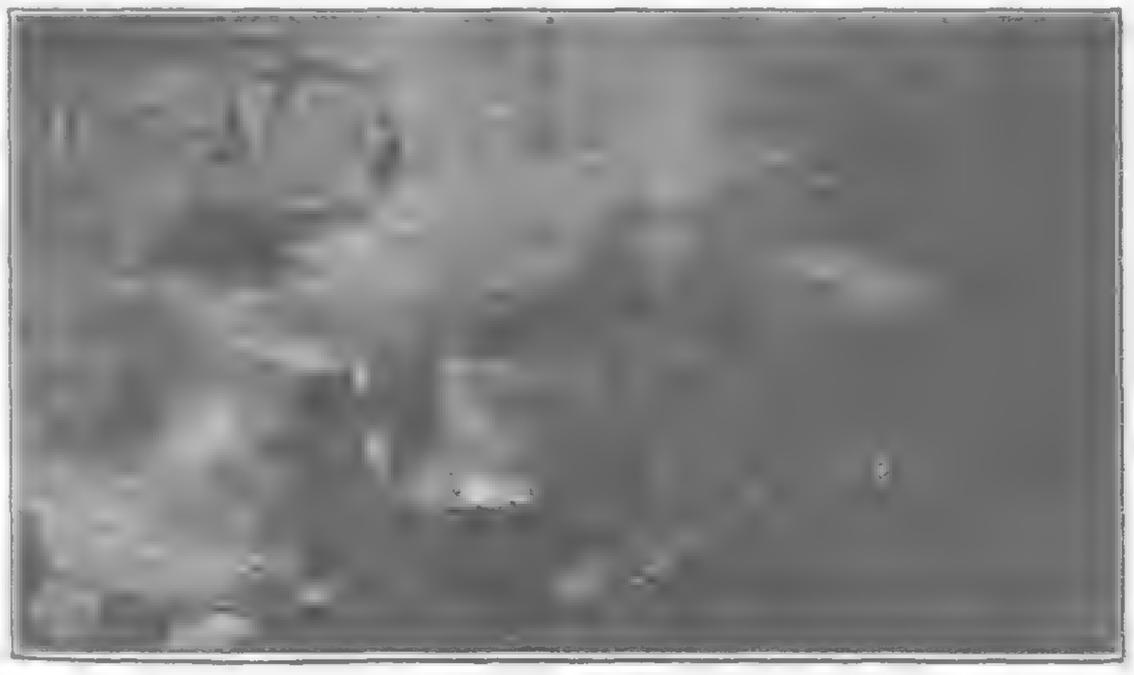
As points of cargo origin, the importance of the upper and central Yangtze needs no stressing.

In general, it may be stated that in shipping goods up-river there is on the whole plenty of cargo space; tonnage shortages are more apt to occur in sending the products of the interior down the Yangtze. The data here presented below, itemizing the figures of the whole trade of Yangtze ports just considered, develops this situation. At the same time, the relation between foreign and Chinese imports should not be overlooked—the two types of business being given separately.

Between Shanghai and Hankow, up-river, the rates for cargo are Tls. 4.50 to Tls. 6 per ton, and down river from Tls. 6 to Tls. 7.50 per ton. From Hankow to Changsha, general cargo, the rate is Tls. 3.45 per ton, from Hankow to Ichang, Tls. 7.50 per ton, and from Ichang to Chungking, from Tls. 3.50 to Tls. 11 per picul, according to the nature of the cargo. Down-stream high class cargo such as silk and bristles cost Tls. 11 per picul. The river rates are an increase of about fifty per cent. over those ruling in 1917.

IMPORTS AND EXPORTS ITEMIZED, FORMING THE WHOLE TRADE OF YANGTZE PORTS IN 1917.

Port.	Hk. Tls. Net Foreign Imports.	Net Chinese Imports.	Exports.
Shanghai	89,299,892	46,991,792	140,119,734
Chinkiang	8,866,872	5,758,788	3,388,511
Nanking	11,766,238	3,708,181	7,440,603
Wuhu	7,140,638	4,733,520	7,573,036
Kiukiang	12,544,067	6,120,817	23,271,150
Hankow	47,310,560	21,796,217	101,623,290
Yochow	2,745,288	2,506,539	2,222,702
Changsha	9,242,404	3,010,701	15,239,123
Shasi	2,404,656	476,785	1,541,408
Ichang	2,157,359	1,377,973	2,150,257
Wanhsien	376,706	112,614	1,297,629
Chungking	9,493,037	9,080,971	15,018,525



WATER OF A YANGTZE RAPID OVER THE BOW OF THE SHUTUNG

Just what is Shanghai's function as the emporium of Central China? The following analysis suggests statistically the origins and destinations of the Shanghai import-export trade. Bearing in mind the figures just presented, which should serve as some indication of the immense volume of commerce pouring down the Yangtze past Shanghai's door, it seems safe to say the heading, "Chiefly from (to) Northern and Yangtze Ports," in nowise implies that the up-coast trade has anywhere nearly the importance of the river commerce. Excepting for the universal effects of the Great War—tonnage limitations, freight rates, and trade restrictions—which cannot be gone into here, the following presents a fair picture of prevailing tendencies:—

GROSS AND NET VALUES OF THE FOREIGN AND DOMESTIC TRADE OF SHANGHAI, ACCORDING TO ORIGINS AND DESTINATIONS, 1917.

Hk. Tls.

Classification of Goods.	Gross Values.	Net Values.
FOREIGN GOODS:		
1—Imports from Foreign Countries and Hongkong	210,085,990	
2—Imports from Chinese Ports	4,604,029	
Total Foreign Imports...	214,690,019	
(a) Re-exported to Foreign Countries and Hongkong	8,037,819	
(b) Re-exported to Chinese Ports (chiefly to Northern and Yangtze Ports)	117,352,308	
Total Foreign Re-Exports...	125,390,127	
Net Total Foreign Imports...		89,299,892
CHINESE GOODS:		
Imports chiefly from Northern and Yangtze Ports	225,423,085	
(a) Re-exported to Foreign Countries and Hongkong	134,885,318	
(b) Re-exported to Chinese Ports	43,545,975	
Total Chinese Re-exports...	178,431,293	
Net Total Chinese Imports...		46,991,792
1—Domestic Produce of Local Origin, Exported to Foreign Countries and Hongkong	62,469,341	
2—Domestic Produce of Local Origin Exported to Chinese Ports	77,650,393	
Total Exports of Local Origin...		140,119,734
Gross Value of the Trade of the Port...	580,232,838	
Net Value of Trade of Port*		276,411,418

If this establishes the supremacy of Shanghai, it is equally the foundation of Hankow's prosperity. More than half of the foreign imports into Shanghai, we have seen, are re-exported to northern and Yangtze points; the greater proportion by far passes up the Yangtze, and Hankow's proportion is not small, probably accounting for 20 per cent. anyway of this Shanghai trade. In the case of the Chinese produce which Shanghai takes, a comparison of the figures in the foregoing tables would tend to show that Hankow must furnish a considerably higher proportion of Hankow and Shanghai. The steady development of direct trade between Hankow and foreign countries, showing every It is a striking demonstration of the economic interdependence indication of being more pronounced in the future, will work to the disadvantage of down-river entrepots. The trend in this direction is bound to alter the balance of trade in the Yangtze Basin; far-sighted business more and more will tend to establish itself in Hankow in order to participate in the coming extensive exploitation of the western provinces of China. Thus this relationship, at present so advantageous to Shanghai, cannot maintain its terms more than relatively; and the absolute position of this clearing-house for China's wealth will not become more favorable in the trade of the Yangtze Valley, looking forward for a generation of economic development.

Net Value = Foreign and Chinese imports less re-exports, and Chinese exports of local origin.

Development and Port Potentialities

SHANGHAI.

Thus for trade with Central China, Shanghai is an indispensable base of operations. Its harbor is formed by the lower reaches of the Whangpoo, which empties into the Yangtze 13 miles further down; here is located Woosung, Shanghai's port of call for liners when tidal or cargo conditions do not warrant going up the Whangpoo, lighters being employed to load and unload. Within the harbor limits of Shanghai, the river bank on either side is protected by bunding and warehouse facilities are immediately adjacent.

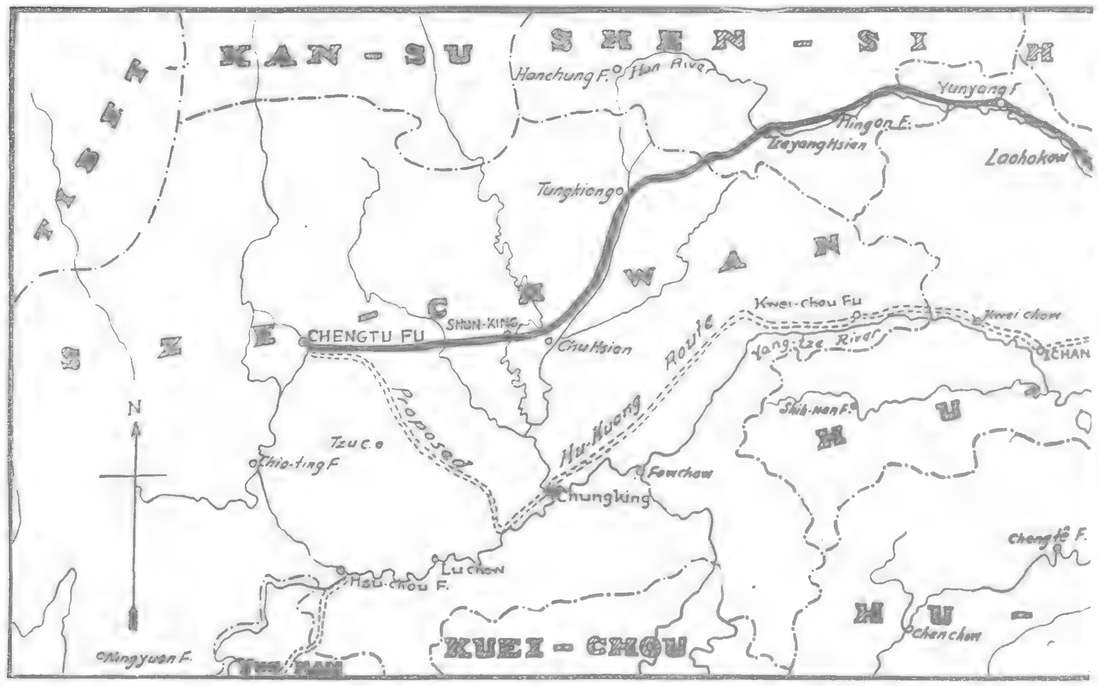
Immediately across from Shanghai lies Pootung; this is rapidly developing industrially and much of the river frontage cannot be had at any price. There are government holdings, mill frontages, etc., and a couple of shipbuilding plants. The Japanese recently have been especially active in increasing their holdings here as well as across the river. On the Shanghai side from Soochow Creek, where the Whangpoo turns sharply at right angles, to Hankow Road the Bund is parked and has no commercial use for any but small boats—a distance of a quarter of a mile. But up-river from the Custom House through the French Settlement to the China Merchants Steam Navigation Co., there is a succession of landings. While steamers up to 6,000 or so tons can berth here, this is devoted chiefly to river traffic coming in from the Yangtze. Further on comes the junk landings lining the native city up to the site of the Kiangnan Dockyard and Government Arsenal; there is 16 feet of water here.

Soochow Creek marks the beginning of large liner berthing. The creek itself is economically important for the junk trade, as its windings tap a valuable industrial portion of Shanghai. Below it, from the American consulate on, there are a succession of godowns, wharfage for the N.Y.K., Pacific Mail, China Mail, Jardines, etc., as well as an industrial frontage more fully developed than on the Pootung side This is the most desirable region but there is little opportunity for the acquisition of space and the prices are high.

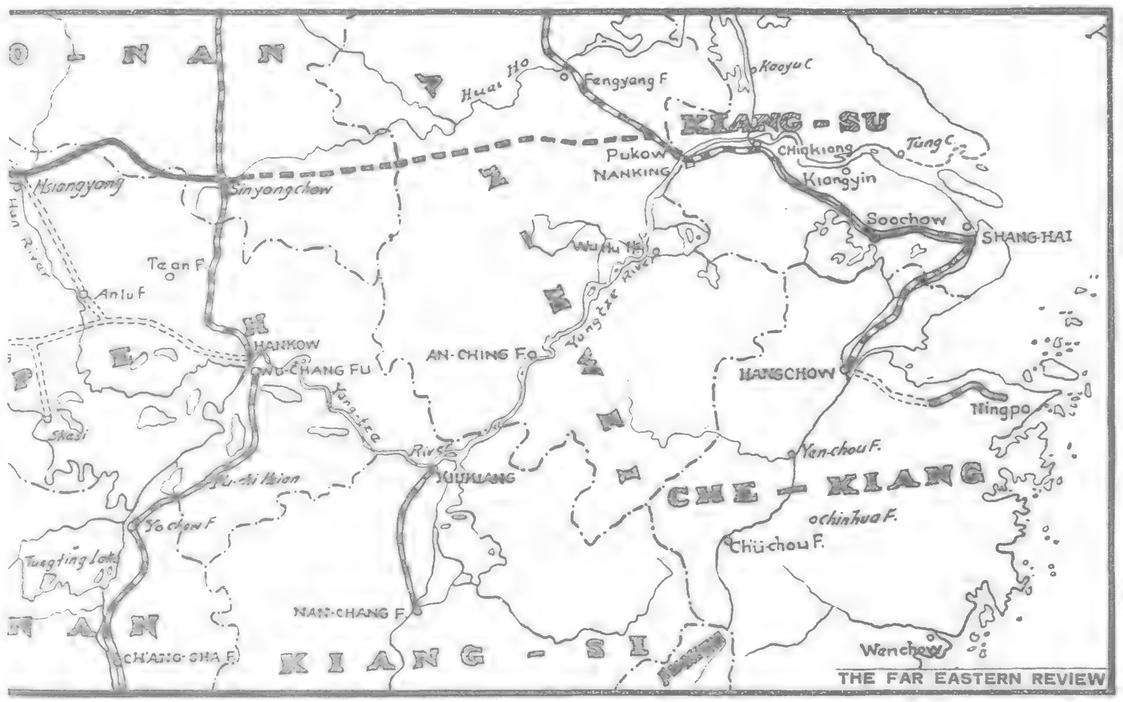
All in all, the Harbor Master of Shanghai reports, there is little wharfage available. The demand is steady; he did not think that even this would be open to purchase long (October, 1918). One could get frontage if prepared to pay the price. That, however, must be met as the future holds little promise of a drop in value.

Shanghai is a community of more than a million souls—about 21,000 foreigners, with the Japanese a fast-growing element—and easily over 1,100,000 Chinese.

THE PROJECTED RAILWAY FROM SZECHUAN TO THE SEA.



The heavy black line roughly indicates the route of the projected railway to be built under contract with the Siems-Carey Railway and Canal and Chinese Corporation, work upon which was suspended shortly after the outbreak of war. The road between Nanking projected in connection with



Company. The blocked line between Sinyangchow and north of Pukow, indicates the railway which is being built in agreement with the British and Shanghai is in operation The double dotted line running eastward from Chengtu along the Yangtze to Hankow is the Hukuang Railway agreement.

There is under contemplation the construction of a railway* to enter Szechuan province from Sinyang, on the Peking-Hankow Railway, which, if constructed, will have a tremendous influence upon the future of China and revolutionize trade with her richest province. Such a line has been surveyed and pronounced feasible by the Siems-Carey engineers. Reference to the map above will show it as a black line running westwards to Chengtu from Sinyang. If this is built it will connect with the line under construction when the war broke out between Pukow and Sinyang, and from Pukow traffic will follow the line already operating to Shanghai. Even casual acquaintance with China will be sufficient to impress one with the great advantages of this project. It will open the most important western province, make it accessible from north, south and east China, by way of existing railways and lines under construction, and in fact will put it in touch with European systems viâ Siberia. That it will affect the traffic on the Yangtze, which is now dangerous and difficult through the Gorges is certain, but that it will eliminate that traffic is not likely since the proposed line will traverse a region distant from that served by the present means of communication. All passenger traffic from east of Ichang is certain to go by rail, even to Chungking, for it will be easier to enter Szechuan by rail and travel down the Kialing river, which debouches on the Yangtze at Chungking, and which will be crossed by the railway within navigation limits, than to go by the Yangtze.

Another railway is also contemplated to connect Ichang with Szechuan, viâ the Yangtze valley, and this line has been partly constructed and completely surveyed for some distance. It is part of the Hu-kuang railway system, but whether it will be built now that another route has been discovered remains to be seen. Construction work up the river valley will be extremely difficult and will test the best engineering skill, as well as be high in cost.

* See FAR EASTERN REVIEW, February, 1917; August, 1917, "Taming the Yangtze Dragon"; July, 1918, "A Low Grade Route to Szechuan."



Photo: F. T. Mayers.

A VIEW OF CHINKIANG

CHINKIANG.

The first port of call in the Yangtze itself, on the run up-river, is Chinkiang. This is a treaty port having a total population of approximately 200,000.

It is well located from the standpoint of communications and transit trade. It is 43 miles south of Nanking, being connected by rail with that city and Shanghai and Soochow. It is at the point where the Grand Canal—now under renovation—crosses the Yangtze. Hence it is a centre for junk traffic with cities lying to the north such as Tsing-kiang-pu, etc.: also this great inland waterway of artificial construction makes it possible to tap Hangchow and other cities of Chekiang Province.

Chinkiang is in the centre of a food-growing and silk country; industrially, it lacks mineral resources and has not developed as rapidly as was anticipated some years ago. It has no future beyond that of a distributing point and can be discounted in plans for Yangtze trade, lying as it does midway between Shanghai and Tientsin—economically tributary to both these places

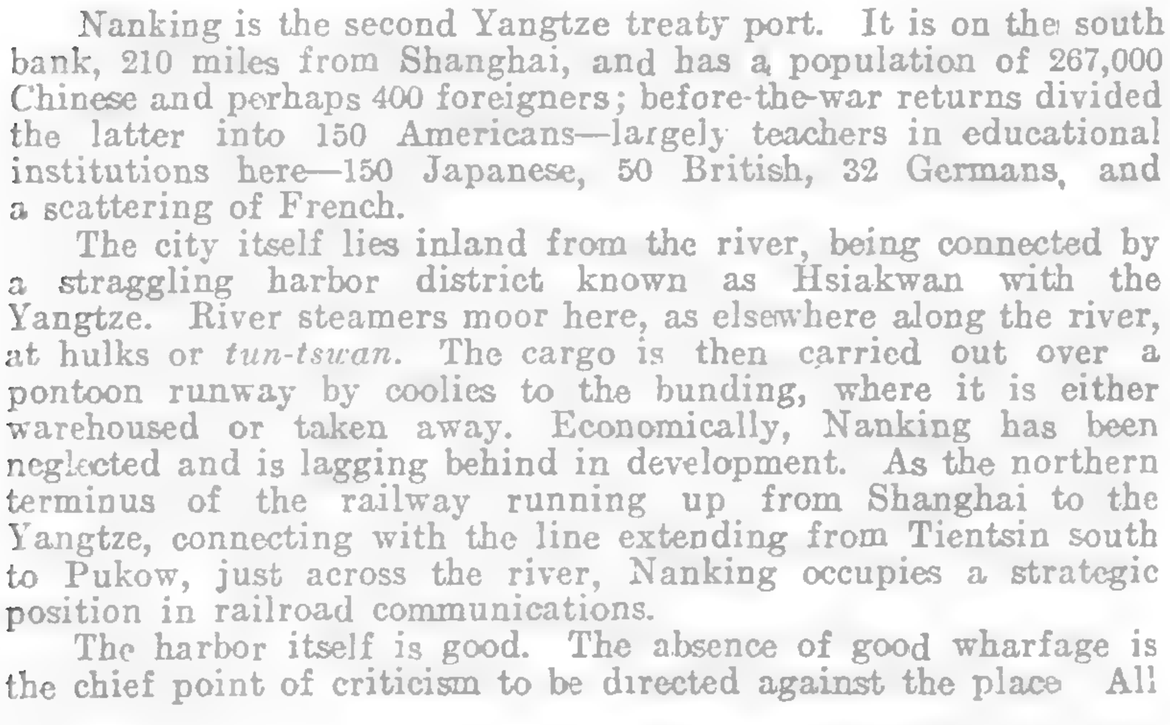
It is suffering from port difficulties, too. The Yangtze narrows here. There is no conservancy work; consequently the approaches yearly become more difficult because of the silting up which is going on constantly.

NANKING.

Nanking is the second Yangtze treaty port. It is on the south bank, 210 miles from Shanghai, and has a population of 267,000 Chinese and perhaps 400 foreigners; before-the-war returns divided the latter into 150 Americans—largely teachers in educational institutions here—150 Japanese, 50 British, 32 Germans, and a scattering of French.

The city itself lies inland from the river, being connected by a straggling harbor district known as Hsiakwan with the Yangtze. River steamers moor here, as elsewhere along the river, at hulks or *tun-tswan*. The cargo is then carried out over a pontoon runway by coolies to the bunding, where it is either warehoused or taken away. Economically, Nanking has been neglected and is lagging behind in development. As the northern terminus of the railway running up from Shanghai to the Yangtze, connecting with the line extending from Tientsin south to Pukow, just across the river, Nanking occupies a strategic position in railroad communications.

The harbor itself is good. The absence of good wharfage is the chief point of criticism to be directed against the place All in all, conditions are static here. Such growth as there is will continue to be steady; Nanking will remain an important port of call.



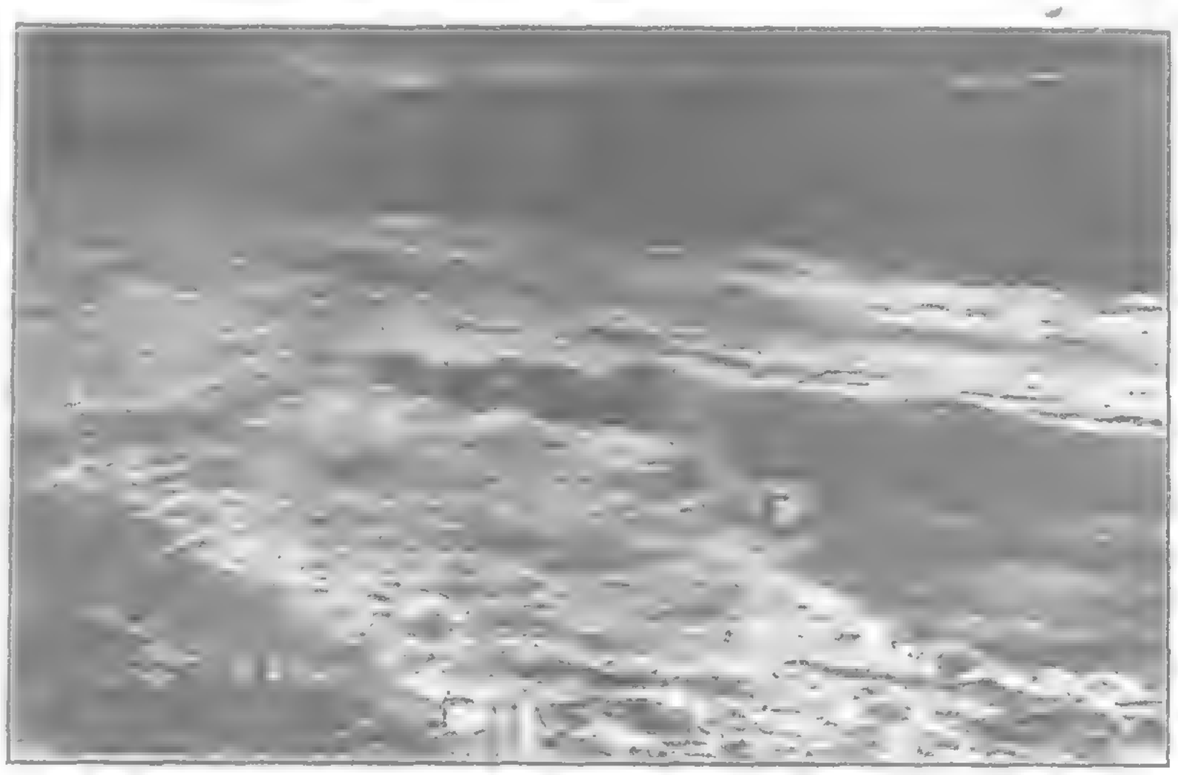
TYPE OF STEAMER USED BY THE STANDARD OIL CO., ON THE YANGTZE

WUHU.

Just 256 miles from Shanghai is the important centre of trade for the province of Anhwei, the city of Wuhu. It is the only treaty port in Anhwei, being opened as recently as 1897 to foreign residence. In this vicinity the activities of the Japanese have become marked, not only as traders but in the development of mineral resources. There is an ore depot established here by the Mitsu Bishi for the shipment to Japan of iron from the Tayeh fields during the low water season on the upper courses of the Yangtze. Moreover, there are two mines being developed to supply Japan with iron ore located at Taoching and Tsai sz-chi, on either side of Wuhu. The output is 70,000 and 80,000 tons a year.

Wuhu is a great shipping point for agricultural products, especially tea and rice. A system of canals and a lake lying behind Wuhu have made it a collecting point. Taiping, the great tea mart, exports because of this through Wuhu. In spite of this and the large rice trade, industrially it is stagnant The rice trade averages ten million bushels a year.

The commerce of the port is being shifted to the New Settlement, a foreign concession being laid out along modern lines with several thousand feet of bunding; all the steamship lines plan to shift down here from their present location along the native city as soon as the Customs House is completed. At present there are about 80 foreigners and 130,080 Chinese in Wuhu.



A 50-TON CARGO JUNK DESCENDING THE GLORIOUS DRAGON RAPID, UPPER YANGTZE

KIUKIANG.

Up-river from Wuhu lie Tatung (pop. 60,000); Anking, the provincial capital of Anhwei (pop. 500,000) which has not recovered from a disastrous civil war of half a century ago; and Hukow, strategically important because it guards the entrance to Lake Poyang (pop. 50,000). But the proximity of Kiukiang, with its foreign concession, has made it the economic entrepot As a treaty port, it was opened up as early as 1862; its population is 36,000.

Kiukiang is 453 miles from Shanghai. It is a great tea market and exports much food besides. Being just above the entrance to the second longest lake in China, Po-yang, this is a port of transhipment for cargoes destined for interior points to the south of the Yangtze River. This body of water, eighty by twenty miles in area, as the centre of a remarkable system of communications draining into it, formerly was of tremendous importance because it tapped Canton lying far to the south. At present, this is of declining value because of railroad developments between Canton and Hankow. However, this is the base for several lines of steamships of shallow draft, linking up with the larger Yangtze traffic. The Nisshin Kisen Kaisha and the two British companies maintain a service here during high water; but in the winter this has to be superceded by a tug and launch service with a maximum size of 100 tons. Kiukiang is one terminus of a provincial railway running inland to the capital of Kiangsi, Nanchang.

HANKOW.

Between Kiukiang and Hankow are Wusüeh, 27 miles above the first-named place and of small importance (pop. 6,000); Hwang-shih-kang, the ore shipping point for the great Tayeh

mines located inland 19 miles and connected by railway, having a cement works in operation and large iron works under development (pop. 6,000); and Hwangchow, (pop. 30,000) whose bad anchorage makes it of slight importance economically at this time.

Hankow is the junction-point for two great railway systems—that, with its laterals, running north to Peking; and the network of lines being developed in a southward and westerly direction. It is also at the meeting place of two rivers, for the Han joins the Yangtze here; separating Hankow from Hanyang, its sister city, the Han-shui presents literally a forest of masts. There is more junk traffic here than any other one place in China, for a system of waterways furnishes a short-cut to the upper Yangtze port of Shasi avoiding a great bend in the main river.

From the standpoint of communications, Hankow is thus without a rival. Excepting for the months December-April, a trans-oceanic service can be maintained up the 600 miles of the Yangtze. Under normal world conditions, Hankow is in direct communication by railway with Petrograd and the capitals of Europe—excepting for the 20 miles of the English Channel; with the manufacturing cities of Great Britain. Its connections with Canton, Shanghai, Yunnan, Szechuan, even Burma and Tibet, make Hankow unique among China's cities with a future

Hankow is the commercially important of three cities known as the "three Han towns," or the "Wuhan Group"—as Hankow. Hanyang, and Wuchang are variously designated. Foreign commerce centres on Hankow, the river lines mooring alongside pontoons and hulks for a stretch of several miles of bunding. Its population is nearly a million—1,500 Japanese and about the same number of Europeans (British 508, Germans 347 in 1913, American under 200, French under a 100, Russians, Italians, Spanish, and Scandinavians). Just across the Han is the thriving industrial city of Hanyang (pop. 100,000), the centre of the iron business of the Yangtze. Opposite these two places—Hankow and Hanyang being on the north or left bank of the Yangtze—is the political centre, Wuchang (pop. 250,000). Hankow is the product of modern commerce, having grown from the status of a small town overshadowed by both Hanyang and Wuchang into the economic capitol of China.

Trade representation must be had here if expansion in Chinese commerce is anticipated. It is being recognized more and more by Shanghai firms that business no longer can be done only in Shanghai; Hankow is the key to Yangtze trade of the western provinces and offers the greatest field for development to-day in the republic.

At present, the trade situation is as follows: In the distribution of direct sales, Japan does nearly one-half of the business here; Great Britain probably 30 per cent., when one lumps the totals; and America nearly 17 per cent.

While the United States only sold about 17 per cent. of Hankow's total importations directly, her exports were 59 per cent. of the total. In 1917 Japan increased her sales 35 per cent., while America—in spite of adverse shipping conditions—expanded by 28 per cent. This brings us to the point of who carries this trade. Britain handled 1,103,000, Japan 832,000, the United States 66,000 and China herself 547,000 tons to and from Hankow—only steam vessels being included.

YOCHOW.

Up-river from Hankow 122 miles, on the south bank of the Yangtze, is the city of Yochow. It is just off the main course of the river, situated on the outlet of Lake Tung-ting.



VIEW OF THE HAN RIVER AND TORTOISE HILL FROM HANKOW

Economically the place only is important as a point for the transhipment of goods destined for the interior of Hunan. It has a population of 20,000. The anchorage is bad, due to the strong winds and the absence of proper facilities—there being no hulks here. Tung-ting Lake is 80 miles from east to west and 700 from north to south—an area of about 4,000 square miles. In winter, however, it becomes too shallow for even steamers of specially constructed draft (2 feet in some places); from December-March, steamer service is maintained only between Yochow and Hankow, the route through to Siang-tan (beyond the important city of Changsha) is kept up by junks—possibly by launches.

CHANGSHA.

The capital of Hunan Province, Changsha, is situated on the Siang-kiang, 222 miles from Hankow. It has only been made a treaty port for a decade or so—1904; it has a population of 500,000.

Changsha is the centre of a rich agricultural region. Up until the completion of the northern section of the Hankow-Canton Railway, its only access to the Yangtze was through Lake Tung-ting and Yochow. From three to five million bags of rice (200-lbs. each) are exported annually; besides this, Changsha produces tea, paper, tobacco, lacquer, hemp, cotton-cloth, pottery, and such minerals as iron, antimony, and coal—the Ping-hsiang fields supplying the Hanyehping Ironworks at Hankow are a little to the southeast. The annual trade of Changsha is nearly Tls. 10,000,000 larger than that of Nanking under normal conditions.

SHASI.

On the Yangtze itself, the river swings in a big south-westerly elbow starting on a reverse curve at Shasi, 183 miles above Yochow and nearly 300 from Hankow. This bend formerly was eliminated by a network of canals leading into the Han River. But the junk traffic has fallen off, due to steam competition on the Yangtze, and Shasi has suffered. The place has a population of 80,000, it having been opened by the Japanese to foreign trade. It is a forwarding point for cotton.

ICHANG.

Nearly 1,000 miles from Shanghai—387 miles from Hankow—the gateway to the famous Yangtze gorges, Ichang, marks the head of general steam navigation. Ichang was the southwestern competitor of Shasi until up-river steam navigation made it possible to run the gorges of the Yangtze in specially adapted boats; now it is the transhipment point for Szechuan products and imports, with a population of 40,000.

Ichang has thus become an emporium for this region. Several Chinese companies, the Standard Oil, and a British concern run launches or small steamers of great power through the narrows of the Yangtze. Chances of loss are high; but the profits great. During low-water months, this use of special steam-craft ceases; communication with Chungking, the height of navigation on the Yangtze itself, continues by junks.

CHUNGKING.

The limit of direct trade with the coast is Chungking, about 400 miles above Ichang. It is the chief riverport for Western China, approximately 1,400 miles from the mouth of the Yangtze. This treaty-port has a population of over 300,000; there are a number of foreign firms located here, such as the Standard Oil, the British-American Tobacco Co., India and Eastern French Trading Co., the N.K.K., the Shufuku Yoko (Japanese export), Butterfield's, Jardine's, the Singer Sewing Machine people, and some 30 others.

Chungking acts as the collecting point for all of Szechuan; part Kweichow; Yunnan, and even products from the westernmost of China's dependencies. Junk traffic is heavier here than anywhere else on the upper river excepting Hankow. Exports from here include hides, bristles, musk, medicinal products, silk yarn and fabrics, hemp, and minerals—this opens virgin fields of mineral wealth, there being exported under primitive conditions iron, copper, and salt.

* * *

The above article was chiefly compiled from a report by Professor Charles Hodges, who made a special study of conditions on the river in the latter part of 1918, and kindly placed his report at our disposal.

Shanghai

Apart from Hongkong and Canton, Shanghai plays a far more important part in the trade of China than any other port, chiefly because it is the clearing port of North China and because of its convenient geographical situation. The city is situated about 75 sea miles from deep open water and about 15 miles from the mouth of the Whangpoo, which prior to the thirteenth century was merely a canal little used, which flows into the mouth of the Yangtze River at Woosung. The river, one of the most treacherous in China with deadly and strong currents, on which the city stands, will allow the passage of ships of about 27 feet in depth, but if the proposed scheme for the improvement of the harbor, formulated by the Whangpoo Conservancy Board goes through—and so far it has not met with serious opposition—the river will have a depth of 28 feet at low tide.

But before entering into a discussion of the trade of the port or of conservancy matters it is perhaps as well to dip as far as possible into history and from it to show how rapidly foreign Shanghai has developed. When the British secured from China treaty rights in the five ports, Shanghai being the principal one, what is now known as the Model Settlement, or the settlement where all the big business houses are situated and round which a very big city has arisen, Shanghai was nothing but a swamp through which flowed innumerable creeks connecting the large fertile plain beyond and forming a breeding place for the mosquito and malaria. With true British characteristics this place was turned from a useless swamp until to-day, boasting magnificent roads, and every modern convenience, except sewerage, priding itself on its local government and modernity seldom excelled either in Europe or America, it is a city which might have been transplanted from any Occidental country.

But as far as the Chinese City of Shanghai is concerned, the little headway therein made has been recorded since the overthrow of the Manchus when, soon after peace was restored, the wall around the city was pulled down, the stinking moat filled in, and around it electric rails laid over which cars travel carrying thousands of passengers daily. Within the city itself constant improvements are being made. The main street has been widened and new buildings are being erected on sites formerly occupied by dilapidated shops which, even amidst their poverty stricken surroundings, were carrying on quite a large business, chiefly catering for the tourist. The odors of to-day, however, are little less pungent than in the days preceding the revolution, little care is taken of sanitation, and persons suffering from leprosy and foul diseases, utilized by the beggar guild for the benefit of its members and its kind, are allowed to wander unhampered amongst its thousands of inhabitants. Often has it been said that the Chinese are making progress in civic affairs and while that may be true, it is often done slowly, and a visit to the city will convince one that the authorities there have not yet fully realized the importance and the desirability of establishing conditions such as those they must see every day across the boundary in the French Concession and the International Settlement.

Nevertheless, despite its filth and dirt, despite its odors and disease, old Shanghai has always played an important part in the trade of the province of Kiangsu and has tapped the resources of far Szechuan, Anwhei, Honan and the large territory in the Yangtze Valley, rich in mineral, agricultural and animal resources. Its name is derived from two characters, *Shang* and *hai*, the former meaning "up" and the latter "sea," the combined meaning leading to "Up from the sea." Centuries ago Shanghai was so wealthy that the inhabitants sought protection from Peking against pirates and they have constantly had to defend themselves from raids of all descriptions. The first foreign merchants to arrive were called "Mermen of the Sea." and it was with no small amount of difficulty that they established trade relations.

To day, however, Shanghai is the centre not only of the trade of North China but of the various ports along the Yangtze and in the adjoining provinces to Kiangsu. Railway communication has been established with Nanking and Tientsin, with Hangchow, in Chekiang, and with Woosung, though the latter line does not play a very important part in the history of the trade of the port. Its claim to the recognition of history is that it was the route of the first railway laid in China and that the Chinese, whose superstitions had been trampled under the foot of the foreign devil, tore it up. For countless miles around Shanghai there are innumerable creeks, tapping a very rich country and daily bringing into Shanghai the produce of its fertility. Tidal as they are for fifty miles from Shanghai these creeks, up which the small Chinese craft can easily make their way, have directly contributed to the prosperity of ancient Shanghai and have had much to do with the progress of Shanghai as it is to-day.

Adjoining the Chinese city is the French Concession, which viewed from the river does not claim to be prepossessing, but acquaintance with it reveals its charming beauties, the French having utilized their artistry in laying out a beautiful concession. The Concession and the Settlement, until about two years ago were divided by a filthy creek, but to-day a very wide road has been constructed bearing the name of Avenue Edward VII. The International Settlement possesses some very fine buildings, of massive design, with the Customs House of Tudor style and the Cathedral standing out in relief to the stone edifices which grace the river front. It is in this settlement that the trade of the port is centred, with its big business houses, its stock exchange, its Chambers of Commerce—for nearly every nation now has its own Chamber of Commerce—and its many banks. The British have long been predominant, but the influx of the Japanese is making a vast change in the Settlement. To-day there are roughly ten thousand Japanese in the Settlement against four thousand British and two thousand Americans. The Japanese trade with the port is extensive and the Japanese are buying everything which other foreigners and Chinese are willing to sell. Already they possess quite a considerable portion of the water front, they are purchasing land in the Yangtzepoo, or industrial district, own several cotton mills and recently purchased a British-owned cotton mill.

The gross value of the trade of Shanghai in 1917 amounted to $591,837,495, being an increase of $118,647,705 over 1916. In Haikwan taels, as stated in the Chinese customs returns, the increase was 8,987,166 taels, the greater gold dollar increase being due to the comparative higher value of the tael in 1917. Of the foreign trade of China, which was above the billion-dollar mark, Shanghai handled $415,589,461—or about 40 per cent.

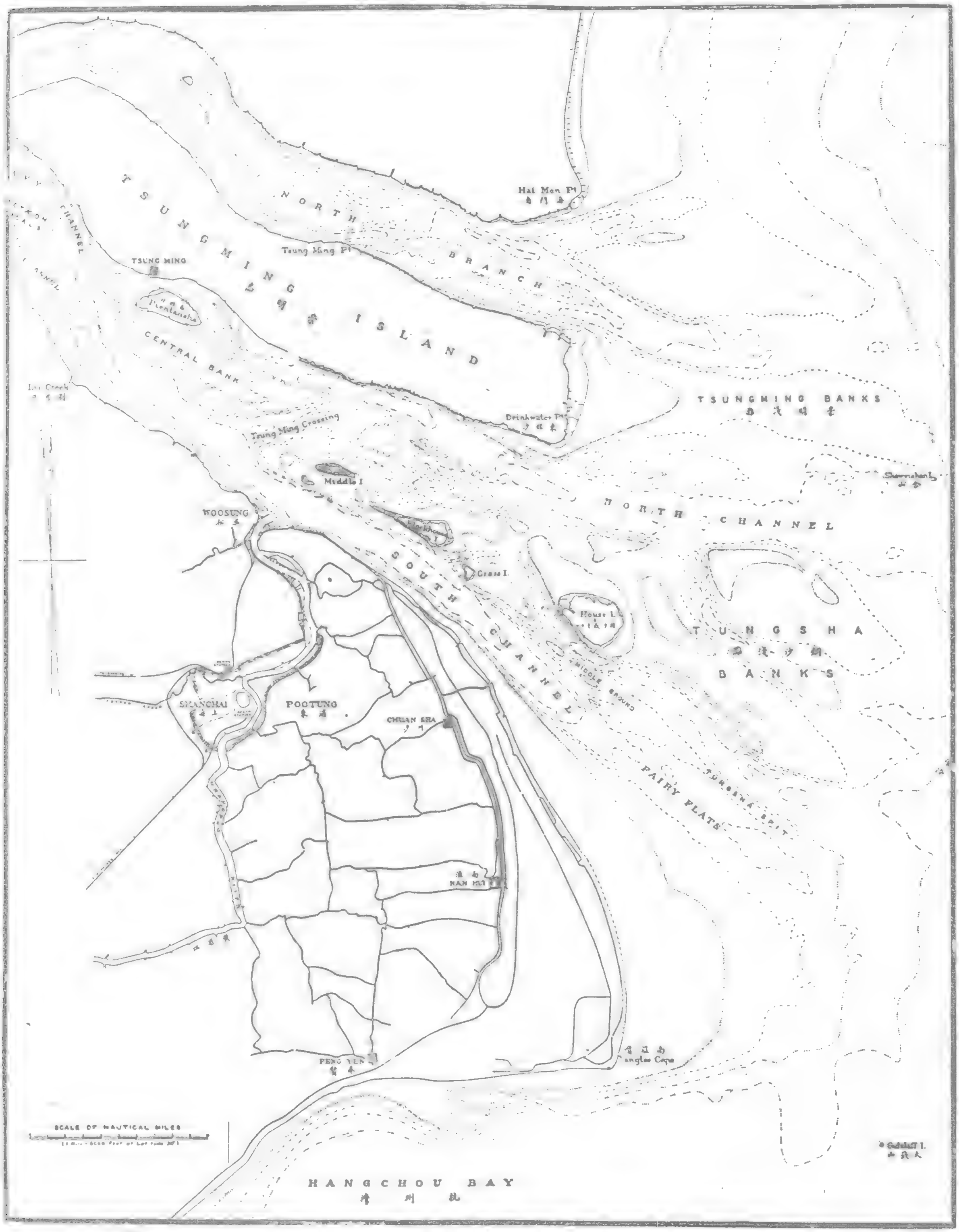
The values of the total trade of Shanghai in 1917, with the equivalent in gold currency in each instance, are given in the following table:—

	1917 Tls.	1917 Gold Equiv.
Imports of Foreign Goods		
From Foreign Countries	210,085,990	214,287,709
From Chinese Ports	4,604,029	4,696,110
Total	214,690,019	218,983,819
Re-exported	125,390,127	127,897,929
Net Foreign Imports	89,299,892	91,086,890
Imports of Chinese Goods:		
From Chinese Ports	225,423,085	229,931,547
Re-exported	178,431,293	181,999,918
Net Chinese Imports...	46,991,792	47,931,629
Exports of Chinese Produce of Local Origin...	140,119,734	142,922,129
Net Foreign Imports	89,299,892	91,085,890
Net Chinese Imports	46,991,792	47,931,629
Chinese Exports	140,119,734	142,922,129
Net Net Value of the Trade	276,411,418	281,939,648



Photo. [illegible]

TRADING JUNKS ON A CREEK NEAR SHANGHAI



THE APPROACHES TO SHANGHAI HARBOR

From "Report on the Future Development of the Shanghai Harbor" by Drs. J. Gust, Richert, Messrs. P. G. Hornell and H. von Heidenstam, April, 1918

The gross value of the principal foreign articles imported into Shanghai during 1917 is shown in the accompanying table, the figures being taken from the Chinese Maritime Customs:—

Articles.		1917 Quantity.	Value.
Automobiles and accessories		—	$638,854
Bags:			
Cotton	number	6,319,542	478,831
Gunny	do.	8,545,934	1,420,021
Belting, machine		—	230,295
Benzine	gallons	651,602	225,976
Books, printed		—	269,169
Butter	pounds	636,800	301,547
Candle-making materials; Stearin	tons	706	243,745
Candles	pounds	3,283,733	452,170
Canned goods:			
Fruits and vegetables		—	119,457
Meats		—	22,040
Milk, condensed and sterilized, and evaporated cream	dozens	427,732	617,948
Cigarettes, first and second quality	thousands	3,976,311	16,916,584
Cigars	do.	30,092	445,060
Clocks	number	128,407	213,257
Coal:			
Hongay (Tongking)	tons	9,674	118,410
Japan	do.	909,746	9,279,409
Coffee	pounds	2,380,794	403,764
Cotton, raw	do	36,977,200	6,194,975
Cotton goods:			
Brocades, italians, satins, etc., white	pieces	118,628	572,093
Drills—			
American	do.	2,250	9,390
English	do.	6,097	38,134
Japanese	do.	263,775	1,007,435
Dyed cottons—			
Italians, plain, fast black	pieces	693,093	3,895,321
Lastings, plain, black	do.	62,292	321,502
Venetians	do.	200,536	1,712,056
Italians, plain, colored	do.	116,576	607,617
Ventians, plain, colored	do.	71,451	644,259
Sateens, plain, colored	do	114,979	617,874
Venetians, figured	do.	30,663	266,976
Flannelettes, plain, dyed, and printed 30 yards:			
American	do.	25,434	104,030
English	do.	7,966	34,533
Japanese	do.	329,474	1,303,926
Handkerchiefs	dozen	912,093	388,810
Jeans—			
American	pieces	2,250	9,930
English	do.	6,097	38,314
Japanese	do.	263,775	1,007,435
Sheetings—			
American	do.	65,100	254,320
English	do.	65,275	295,617
Japanese	do.	655,945	2,426,593
Shirtings—			
Gray, plain—			
English	do.	1,252,562	4,352,335
Japanese	do.	655,126	2,234,471
White, plain—			
Dutch	do.	12,475	62,477
English	do.	1,900,971	8,279,489
Japanese	do.	243,417	1,117,284
T cloths—			
English	do.	230,990	789,349
Japanese	do.	148,260	343,821
Thread on spools of 50, 100, 200, 500, and 1,000 yards, spools		70,515	426,345
Velvets and velveteens	yards	2,628,095	875,509
Yarn, gray and bleached—			
Indian	pounds	74,805,733	16,223,680
Japanese	do.	35,942,667	7,536,692
Dyes:			
Aniline		—	538,708
Paints		—	202,741
Electrical materials:			
Cables		—	100,082
Fans and accessories		—	112,218
Insulted and vulcanized wire		—	416,972
Lamps and accessories		—	374,951
Motors and parts		—	68,389
Enameled were: Basins	dozens	74,261	58,941
Fish, salted	tons	20,466	1,189,925
Flour, wheat	barrels of 196 pounds	15,922	93,447
Garters and suspenders		—	272,710
Gasoline	gallons	128,880	88,077
Glass, window		—	511,207
Graphophones and accessories		—	95,457
Haberdashery		—	278,905
Hosiery	dozens	84,306	93,122
Lamps and lampware		—	292,049

Articles.		1917 Quantity.	Value.
Leather:			
Calf, kid and colored	pounds	87,067	277,410
Cow (Hongkong and Straits)	do.	3,335,733	1,213,398
Sole	do.	637,067	344,707
Locks and padlocks		—	85,013
Lumber, planks and logs:			
Hardwood	cu. ft.	1,333,345	578,005
Softwood	sq. ft.	45,421,100	1,990,091
Machinery:			
Cotton and spinning		—	887,273
Electric power station		—	450,099
Flour mills		—	45,689
Ice and refrigerating		—	200,402
Propelling (boilers, turbines)		—	249,298
Machines, sewing and knitting	number	7,044	210,944
Match-making materials: Paraffin wax	tons	9,976	1,784,873
Matches, Japanese, large and small	gross	2,330,101	790,025
Medicines		—	1,179,226
Metals, and manufactures of:			
Brass sheets and plates	tons	185	116,857
Copper—			
Ingots and slabs	do.	314	195,622
Sheets and plates	do.	213	142,215
Iron and mild steel, new—			
Angles	do.	3,338	326,964
Bars	do.	8,793	850,274
Hoops	do.	3,161	430,962
Nails, cut and wire	do.	6,287	1,129,895
Pipes and tubes, cast	do.	2,657	252,784
Sheets and plates	do.	14,749	1,905,619
Iron, galvanized—			
Sheets—			
Corrugated	tons	166	101,833
Plain	do.	777	178,429
Wire, rope and shorts	do.	3,314	460,393
Lead, in pigs and bars	do.	2,794	480,108
Tin in slabs	do.	222	305,694
Tinned plates	do.	10,688	1,542,527
Zinc sheets	do.	278	119,082
Needles	thousands	428,315	402,122
Oils:			
Lubricating	gallons	1,738,933	530,340
Kerosene—			
American	do.	17,839,435	4,038,404
Borneo	do.	2,765,039	423,204
Sumatra	do.	17,391,441	2,660,890
Opium (Malwa, Patna, and Benares)	pounds	107,886	5,729,943
Paper:			
Bank note		—	100,471
Cap	pounds	2,483,333	240,992
Cigarette		—	530,429
Enameled		—	291,908
Printing—			
Calendered and sized	do.	4,525,067	463,937
Uncalendered and unsized	do.	8,295,333	616,496
Paper-making materials: Wood pulp	do.	3,436,800	432,242
Photographic materials		—	109,268
Piece goods miscellaneous:			
Artificial silk fancies		—	316,232
Canvas	yards	402,016	101,284
Cotton duck	do.	655,891	147,558
Gunny and Hessian cloth	do.	3,551,818	362,286
Silk piece goods—			
Brocaded		—	423,003
Mixtures—			
Plain		—	478,073
Brocaded		—	217,518
Porcelain ware, all kinds		—	279,432
Printing ink	pounds	570,933	165,360
Provisions			164,418
Singlets and drawers, all kinds		—	262,886
Soap		—	1,915,241
Socks, cotton	doz. pairs	874,829	882,515
Soda ash	tons	11,032	506,362
Stationery:			
Account books, blank books, etc.		—	262,186
Sugar, all kinds	tons	141,775	15,938,595
Telegraph and telephone materials		—	249,137
Tobacco, leaf	pounds	10,635,733	2,284,034
Typewriters and accessories		—	83,356
Umbrellas	number	—	720,771
Watches		—	189,499
Wines, all kinds		—	883,012
Woolen and cotton mixtures:			
Alpacas, lusters, and Orleans	yards	237,502	112,843
Union and poncho cloth	do.	202,012	158,248
Woolen goods:			
Coatings	do.	168,877	273,015
Lastings, plain, figured, and creped	pieces	3,490	75,70
Serges	yards	149,639	248,490
Suitings	do.	134,840	268,161
Wool, Berlin	pounds	242,267	556,002

Articles.	1917 Quantity.	Value.
Parcel post (not classified)	—	1,506,611
All other articles	—	47,682,550
Total	—	214,287,709

The following table shows the principal articles (including re-exports) exported from the port of Shanghai:—

Articles.		1917 Quantity.	Value.
Beans :			
Black	tons	5,919	$196,299
Broad	do.	54,355	1,130,751
Green	do.	14,730	567,089
Yellow	do.	62,291	2,176,066
Bristles	pounds	6,642,267	4,459,657
Cigarettes		—	7,106,809
Cotton, and manufactures of :			
Raw	do.	112,492,800	20,482,282
Nankeens	do.	13,107,200	5,151,294
Sheetings	pieces	1,068,780	5,515,688
Yarn	pounds	133,161,867	36,705,092
Eggs, albumen and yolk	do.	44,108,666	10,493,415
Fibers : Ramine	tons	19,456	3,928,913
Flour : Shanghai mill, wheat...barrels of 196	pounds	2,029,056	11,042,726
Hides :			
Buffalo	pounds	6,440,933	917,748
Cow	do.	39,406,933	12,229,537
Metals :			
Antimony, regulus and crude	tons	37,387	5,845,870
Oils :			
Cottonseed	pounds	11.219,600	677,584
Peanut	do.	37,038,600	2,992,321
Wood	do.	42.236,400	3,859,549
Peanuts :			
In shells	do.	3,767,600	95,856
Kernels	do.	217,651,333	7,393,956
Rice	tons	154,671	6,037,505
Seeds :			
Rape	pounds	47,235,733	1,325,073
Sesame	do.	31,285,333	1,136,275
Silk, and manufactures of :			
Piece goods	pounds	1,252,267	7,459,749
Pongees		—	5,457,367
Raw—			
White	do.	6,368,000	37,231,352
Yellow	do.	2,543,600	7,813,215
Wild	do.	1,620,800	4,335,524
Cocoons	do.	3,933,733	1,624,535
Waste, cocoon refuse	do.	12,585,200	4,465,479
Skins, goat, untanned	pieces	9,585,482	6,824,889
Straw braid	pounds	2,809,333	1,129,915
Tallow :			
Animal	tons	7,008	1,481,177
Vegetable	do.	10.475	1,948,903
Tea :			
Black	pounds	23,364,267	5,743,853
Green	do.	27,772,267	9,840,789
Wool :			
Camel's hair	do.	3,382,667	986,991
Sheep's	do.	29,860,533	6,977,378
All other articles		—	70,133,576
Total		—	324,922,047

While the foregoing lists give the principal imports and exports, there are numerous smaller items of commerce which do not appear therein but which are a large part of the imports and exports when considered in the aggregate. A few of the imports are mentioned below, reference being to 1917 figures in each instance.

One would not ordinarily believe that thread would make a considerable item of import, yet shipments into Shanghai alone were valued at Tls. 550,456, in round figures a half-million gold dollars. The 200-yard length, reeled on spools, was most popular, for it represents half the total. One's thought naturally turns to needles, for it would seem that a huge number of that necessary article must accompany a demand for half a million dollar's worth of sewing cotton, and on looking down the list the surprising information appears that needles to the value of Tls. 395,000 were imported into Shanghai and shipments to the value of Tls. 605,000 were exported to other Chinese cities—the difference probably to be accounted for by stocks on hand from the previous year. Not a bad business, selling needles and thread to Chinese, when one port alone takes Tls. 1,155,000 worth in a single year! One begins to feel respect for the purchasing power of the aged sewing women of the streets, who are to be seen everywhere in China, industriously plying the needle.

Under the heading of "Iron and Mild Steel, Old" appears the item "Horseshoes, 7,973 piculs," valued at Tls. 25,992. Yet 1917 was a bad year for the trade in discarded horseshoes; in 1915 it was much better, for imports that year amounted to 35,857 piculs valued at Tls. 73,138. Nothing typifies Chinese thrift so well as the large imports of such waste material, which bears high freight charges from Western countries and can still be imported and used at a profit. Old horseshoes are worked up by the Chinese into all kinds of ironmongery, native nails being produced from them in great quantities, as well as native knives and razors.

Turning from an evidence of frugality to one of the Chinese extravagances, medicines, we find imports cinchonine and quinine mixtures worth Tls. 154,919; pills for the kidneys to the value of Tls. 126,000, others pills to the value of Tls. 92,866, Jintan and Sinkaigan to the value of Tls. 102,939, and miscellaneous patent medicines to the value of another hundred thousand taels or so. Patent medicines are advertised in China with all the exaggerated claims made for them in the palmy days of the trade in Occidental countries, and are in demand all over the Republic. "Jintan" is a tonic of Japanese manufacture; Chinese look upon it as a general cure-all and a perfume for the breath. Advertising signboards bearing the Chinese characters "jin tan" (literally "benevolent remedy") are a familiar sight in the most out of the way communities in the land. The two Chinese characters are simple enough to be understood by the dullest reading native, while the claims made for the medicine are of a sort which appeal to the hazy Chinese ideas of pathology—another example of Japanese adaptation of goods and advertising to suit Chinese psychology.

Purely Chinese medicines reached the value of about three million Taels. Ginseng, most popular and highly prized of all the Chinese specifics, accounts for Tls. 535,000 of the total. Imports of a face cream made in England, reached the value of Tls. 13,400.

Soap is an item that might add a few million dollars' income to the manufacturer who could capture the market, for imports of the ordinary household kind totalled Tls. 1,600,000. Toilet soap imports reached the value of a quarter million taels.

Imports of socks were valued at a cool million, "second quality" accounting for three-fourths of the total. Silk socks of brilliant colors have lately come to be the mode among singing girls, who took up Tls. 116,000 worth.

Canned foods reached the value of Tls. 1,047,767, of which condensed milk accounts for Tls. 544,068 (302,260 dozens). The shortage of milk animals in China requires foreigners, and especially those in the interior, to rely largely upon tinned milk, while Chinese as well are learning its uses.

Cigarettes classified as "first quality" reached the value of Tls. 1,585,738, while "second quality" totalled Tls. 14,999,148. Of the former Tls. 1,208,585 and the latter Tls. 10,155,480 went to other Chinese ports. Several very large cigarette manufactories in Shanghai account for the large trade.

Clock imports reached the value of Tls. 209,076 and watches Tls. 185,782. In addition, a large number of clocks are made in native shops, each piece being formed by hand after the pattern of old French clockworks, and most of these are accurate enough for Chinese purposes, especially when corrected daily by the Custom House clock or the time-gun which fires at noon.

Mirrors reached the value of Tls. 277,749 and common window glass Tls. 501,184. The total exports of window glass into China in 1917 were valued at Tls. 1,598,657, and of this total Japan supplied Tls. 979,090 and Russia Tls. 256,632.

While not directly concerning foreign traders, it is interesting to observe that imports of sandalwood amounted to Tls. 524,000. Sandalwood is used largely in the manufacture of joss-sticks. Any number of Asiatic goods might be selected with annual importations into Shanghai alone totalling from a quarter million to a million in value. Examples are: sharks' fins, Tls. 417,000; dried shrimps, Tls. 233,000; salt fish, Tls. 1,166,000.

Soda ash is valued at Tls. 496,434; caustic soda at Tls. 156,359; and silicate of soda at Tls. 29,242.



O.S.K. WHARF, SHANGHAI

The Import of cotton umbrellas from Japan, in value Tls. 675,441, is an example of a foreign product for personal use, so many of which are now being used by Chinese.

Motor car imports were valued at Tls. 638,854. Motor cars in Shanghai sell for very nearly double their price at the factory in America, but are extremely popular with wealthy natives. Lack of shipping alone prevented larger importations. Gasolene sells for about a gold dollar a gallon.

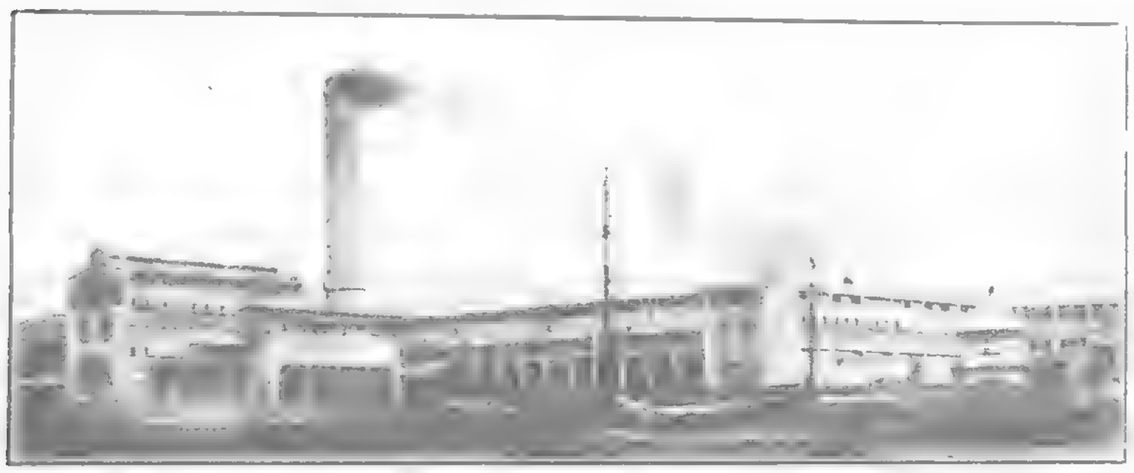


Photo: E. Cox

YANGTZEPOO COTTON MILL, ONE OF MANY INDUSIRIES ON THE WHANGPOO

In brief, one can select from the import lists of China each year an increasing number of articles which are not actual necessities and were unknown in China a few years ago, but which are now used in great quantities. Their significance is understood when the population of the country, its expanding industrial movement, and generally its great potentialities of resource, are taken together; for there is evidence here of great purchasing power in a wide variety of articles which are now little known.

The Chinese are working hand in hand with the American and British and there are many schemes on foot for bringing the business communities of these three nations closer together. The period of reconstruction is now approaching both in Europe and in China. There seems to be a possibility of peace in this land and the peace in Europe will be followed by big demands for goods from abroad. China no doubt will take a large part in this while from Europe and America she will need machinery for the many enterprises on which she is embarking. It is almost impossible to give a list of what China needs. She needs everything from the muck and truck trade to complete plants of machinery for various kinds of works, bridges to span her innumerable creeks, and also railway material for her increasing mileage of permanent way.

The Port as It Is

SITUATION AND APPROACHES.—The port of Shanghai is situated some 75 sea miles from deep open water, the approaches being by way of the estuary of the Yangtze river as far as Woosung and then about 15 sea miles up the Whangpoo river.

The navigability of the channels is partially dependent on the tides and tidal currents.

There are two channels of approach in the Yangtze Estuary. The North Channel, used by vessels running towards the Gulf of Chihli, has a detour behind a group of sand banks and small islands and is about 60 miles long from the 5-fathom line east of Shaweishan Island to Woosung. The minimum depth at lowest low water (L.L.W.) over the main bar is at present about 22 feet but there is less than 25 feet at L.L.W. for a distance of some 22 sea miles. There are two other short bars, one with 31 feet at L.L.W. and another (Tsungming Crossing) with only 16 feet at L.L.W. The last named bar is very variable.

The South Channel is the better and more important waterway. The distance from the 5-fathom coast line to Woosung is the same as for the North Channel but the direction is almost straight. There is only one bar, with a minimum L.L.W. depth of nearly 3 fathoms, but there is less than 25 feet at L.L.W. for a distance of 33 sea miles. The channel is wide and well marked Above the bar there is a wide deep channel of over 40 feet at L.L.W. to Woosung.

Both North and South Channels have strong tidal currents up to a maximum at springs of 6 knots. In the North Channel the current is rotary but in the South Channel there is only a small lateral drift at the turn of the current.

The "rise" above L.L.W. at the main bars in both channels is about 15 feet at springs and 10½ at neaps. The spring range is about 12 feet and the neap about 5 feet. These figures are all reduced by about 2 feet at Woosung and by about 3 feet at Shanghai.

Typhoons occur on rare occasions, and dense mists are not infrequent.

The approach to Shanghai from Woosung is by the Whangpoo River. Thanks to the operations of the Whangpoo Conservancy Board since 1905, the bars which formerly impeded the lower reaches have been removed and there is a fairway depth of practically 24 feet at L. L. W. over a width of 600 feet all the way up to Shanghai. The tidal currents are strong, amounting to 3 knots at springs,

THE HARBOR PROPER.—The harbor proper of Shanghai is 50,000 feet long, consisting of the channel of the Whangpoo from the Kiangnan Arsenal above Shanghai to Tung Kou Creek below the "Point." The width between low water lines in this reach varies from 1,700 feet to 1,200 feet and averages about 1,500 feet. There are three sections allotted for anchorage with a total accommodation of 24 berths for vessels up to 500 feet long, the least depth at the anchorages being 24 feet at L. L. W., and at many berths there is 30 feet and more. The mooring berths extend 2 miles and there are also at least two miles of wharves some 24 feet at L.L.W. alongside. The maximum draft which can be certain of navigating the river at high water is less than 27 feet as the neap "rise" is only about 6½ feet and there is a 22½ foot bar at Wayside. However, the French mail steamer *Sphinx*, 20,000 tons, drawing 33.9 feet berthed in the harbor in December, 1918

HARBOR FACILITIES.—Both shores of the harbor are considerably developed by warehouses, industrial plants and residential quarters but more especially the left or Shanghai bank. There are very few fixed quays for deeper draft vessels, the majority of the wharves having floating pontoons Much of the discharging is done by lighters and some of the larger ocean vessels do not enter the Whangpoo at all but discharge into large lighters at Woosung. There is no direct access to the railway except the Railway godown at Woosung, presumably owing to a set policy and to the possible insecurity of warehouse accommodation outside the area under foreign control. Cargo can, however, be lightered to the railway

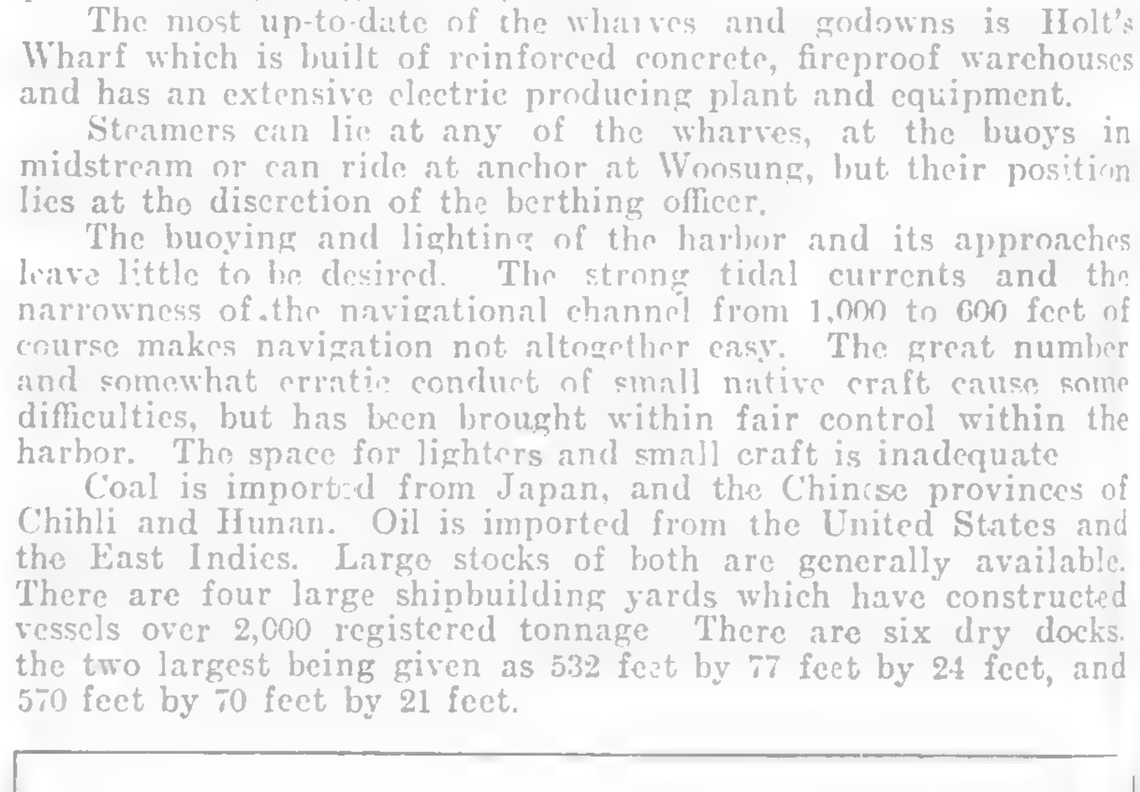
The warehouse or "godown" facilities in Shanghai are very considerable, but in some cases the godowns are not conveniently situated, and goods have to be hauled by stevedores on trucks from public landing stages through the street.

The most up-to-date of the wharves and godowns is Holt's Wharf which is built of reinforced concrete, fireproof warehouses and has an extensive electric producing plant and equipment.

Steamers can lie at any of the wharves, at the buoys in midstream or can ride at anchor at Woosung, but their position lies at the discretion of the berthing officer.

The buoying and lighting of the harbor and its approaches leave little to be desired. The strong tidal currents and the narrowness of the navigational channel from 1,000 to 600 feet of course makes navigation not altogether easy. The great number and somewhat erratic conduct of small native craft cause some difficulties, but has been brought within fair control within the harbor. The space for lighters and small craft is inadequate

Coal is imported from Japan, and the Chinese provinces of Chihli and Hunan. Oil is imported from the United States and the East Indies. Large stocks of both are generally available. There are four large shipbuilding yards which have constructed vessels over 2,000 registered tonnage There are six dry docks. the two largest being given as 532 feet by 77 feet by 24 feet, and 570 feet by 70 feet by 21 feet.



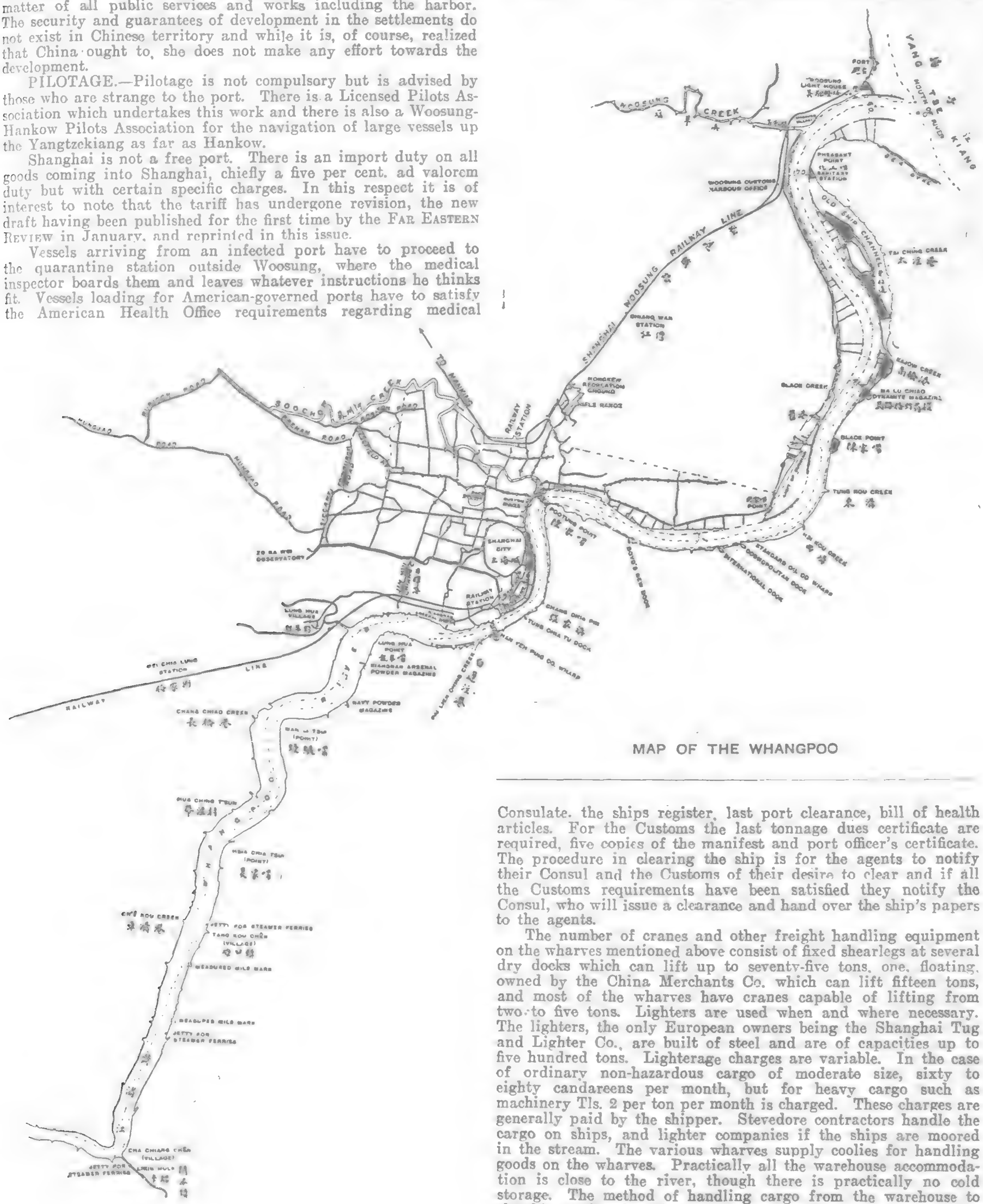
SHANGHAI-NANKING RAILWAY WHARF AT WOOSUNG

The fact that the river banks in the harbor are under several different administrations, such as the Councils of the Foreign International Settlement, French Concession, Nantou and Chapei, the Shanghai Magistrate, the Paoshan Magistrate, etc., is undoubtedly an adverse circumstance in certain respects where comprehensive plans and schemes are required,—such as in the matter of all public services and works including the harbor. The security and guarantees of development in the settlements do not exist in Chinese territory and while it is, of course, realized that China ought to, she does not make any effort towards the development.

PILOTAGE.—Pilotage is not compulsory but is advised by those who are strange to the port. There is a Licensed Pilots Association which undertakes this work and there is also a Woosung-Hankow Pilots Association for the navigation of large vessels up the Yangtzekiang as far as Hankow.

Shanghai is not a free port. There is an import duty on all goods coming into Shanghai, chiefly a five per cent. ad valorem duty but with certain specific charges. In this respect it is of interest to note that the tariff has undergone revision, the new draft having been published for the first time by the FAR EASTERN REVIEW in January, and reprinted in this issue.

Vessels arriving from an infected port have to proceed to the quarantine station outside Woosung, where the medical inspector boards them and leaves whatever instructions he thinks fit. Vessels loading for American-governed ports have to satisfy the American Health Office requirements regarding medical inspection and fumigation. After a vessel has passed the health officer the only other officials to be on board are Customs officials who only require a declaration as to what arms and contraband (opium) are on board and they wish to have a copy of the ship's Shanghai manifest kept on the ship for their perusal and use. In order to enter a ship papers must be furnished for the



MAP OF THE WHANGPOO

Consulate. the ships register, last port clearance, bill of health articles. For the Customs the last tonnage dues certificate are required, five copies of the manifest and port officer's certificate. The procedure in clearing the ship is for the agents to notify their Consul and the Customs of their desire to clear and if all the Customs requirements have been satisfied they notify the Consul, who will issue a clearance and hand over the ship's papers to the agents.

The number of cranes and other freight handling equipment on the wharves mentioned above consist of fixed shearlegs at several dry docks which can lift up to seventy-five tons, one, floating, owned by the China Merchants Co. which can lift fifteen tons, and most of the wharves have cranes capable of lifting from two to five tons. Lighters are used when and where necessary. The lighters, the only European owners being the Shanghai Tug and Lighter Co., are built of steel and are of capacities up to five hundred tons. Lighterage charges are variable. In the case of ordinary non-hazardous cargo of moderate size, sixty to eighty candareens per month, but for heavy cargo such as machinery Tls. 2 per ton per month is charged. These charges are generally paid by the shipper. Stevedore contractors handle the cargo on ships, and lighter companies if the ships are moored in the stream. The various wharves supply coolies for handling goods on the wharves. Practically all the warehouse accommodation is close to the river, though there is practically no cold storage. The method of handling cargo from the warehouse to the ship at the wharf is by coolie and handling costs are paid by

the ship, in the case of cargo discharged, and the ship pays for taking cargo out of lighters and stowing in the case of cargo being loaded.

Coolies are able to handle up to 100 tons per hour from steamers anchored at Woosung.

The Shanghai Waterworks supply water by waterboats at 50 cents per ton.



JUNK AT WORK ON HARBOR IMPROVEMENT, SHANGHAI

Tonnage dues cover port dues and light dues. They are collected by the Chinese Maritime Customs and are paid by the ship owners. Pilotage is by tariff. The charges for buoys are Tls 35 for three days in the upper part of the harbor and Tls 50 for three days in the lower part of the harbor. Cranes and heavy lifts can be had by arrangement. Wharfage charges are moderate, are fixed by arrangement and are collected by the wharf owners generally in about five days. Warehouse rates vary according to the class of goods. For cargoes ex-steamer the ship pays the warehouse charges for ten days, after that the consignees pay the wharf owners. Local delivery charges are paid by consignee and are carried out by lighters, Chinese boats, carts and wheelbarrows. About one thousand tons of cargo can be handled daily, but this depends to a large extent on the vessel's equipment. No receipts are given to ships for inward cargo but wharf and ships tally sheets are interchanged and short and overlanded lists are agreed and mutually signed before the ship sails. Undelivered and unclaimed freight is held by the wharf. After two years or when the charges are near the value of the goods, the wharf concerned advertises that if they are not claimed within one or three months they will be sold by auction to defray expenses.

As regards labor conditions all the labor employed on this work is Chinese, of which there is an unlimited supply. The work is done by contract and few outside the contractor know the wages given to the coolies. Checking clerks are required and the wage per day is Tl. 1 to Tls. 1.50 and food. The coastal and inland steamer boat service is conducted chiefly by the British and Chinese, the lines being the China Navigation Co. to all Chinese ports, the Indo China Navigation Co., Ltd. to all Chinese ports and the China Merchants Co. to all Chinese ports. The following is the list of lines taking part in regular sailings abroad:

To and from Great Britain: The P. & O., S. N. Co, Ltd., The Ocean services Steamship Co., The Glen Line and Shire Line.

To and from France: Messageries Maritimes.

To and from America: Pacific Mail and Dollar Line, Toyo Kisen Kaisha, Nippon Yusen Kaisha and Garland S.S. Co.

To and from Canada: Canadian Pacific Railway, Ocean Services.

The Port of Shanghai as it Should be

It is a characteristic of the age in which we live that endeavors should be made to forecast and prepare for the future in the widest possible sense. Science alone renders it practicable to do this with advantage. In actual fact, the ability to prophesy correctly is the sole criterion by which science can justify itself

Shanghai has been specially fortunate in that, while the outer world has been too much involved in the Great War to think of local affairs, she has remained in almost her pre-War condition, and some of her more enterprising citizens have already endeavored to secure her future by indicating favorable lines of development. Several achievements of this particular kind could be mentioned, but by no means the least is the Harbor Report presented to the Conservancy Board. It is with the latter we are at present alone concerned. It will be remembered that the Board consulted a well-known Swedish firm of Consulting engineers on the future development of the Shanghai Harbor.

In collaboration with Mr. von Heidenstam, the Engineer-in-Chief of the Board, these engineers went very carefully into the data available and also considered the general position of Shanghai as a centre of world traffic. The public is doubtless familiar with the results they arrived at in their "Report on the Future Development of the Shanghai Harbor" 1918.* After proving to their own satisfaction that a Yangtze Estuary port is destined to a predominate role as a distribution centre for China, and that trade will increase to prodigious dimensions as the result of the development of China, they proceeded to show that Shanghai is the port which should take this position and then to consider what must be done to render it suitable. Great stress was thrown on the question of ships' draft and the paramount necessity of rendering Shanghai accessible to ships of the largest future draft on the Pacific, and 40 feet indicated as a probable necessity.

The question then remained, how can this be done? The consulting engineers did not consider the data adequate to answer this question and expressed the opinion that investigations should be immediately instituted to provide the data upon which a technical decision as to methods should be based. We believe that nothing has yet been done in this direction. In the absence of the necessary data, they indicated the probability that it would be necessary to constrict the South Channel by training works so as to get the necessary depth there and to dam the Whangpoo at its entrance so as to make it an immense dock harbor with access through locks. Other conceivable schemes were mentioned such as a *Port de vitesse* on the Hangchow Bay with deep ship canal connecting it with the Whangpoo, a method of scouring out the Whangpoo by special control of the Great Lake, the excavation of docks at Woosung, etc., but in each and every case there are so many at present unknown factors that no person could safely pronounce upon the superiority or otherwise of any particular scheme.

If we permit ourselves to dream of the future and conceive that a scheme of making Shanghai a first class port is duly carried out, some idea of the possible future of Shanghai may be gained.

Great leviathans from the most distant parts of the world arrive daily at the deepwater harbor and are unloaded by electric and hydraulic machinery in a very short time, the cargo being rapidly transferred to godown, railway or power-truck at the wharf. Within 24 hours or so, it will be delivered at destinations in the heart of the coast provinces and in two or three days in Tibet or Mongolia. If a lock harbor is decided upon at Woosung or elsewhere the ships pass in and out on a well organized system through electrically operated lock gates which will only delay the largest vessels perhaps half-an-hour at the most. There will be no delay at the Yangtze Bar at all.

In Shanghai itself wide well lighted roads with segregated traffic will permit the power trucks to proceed outwards to the motor roads which will feed the nearer towns. Clean, well built houses and a proper system of sewage and a spirit of mutual responsibility and help will eliminate squeeze and render the conditions of life pleasant for all types of men willing to work. Ample power supply will build up great industry and provide cold in the summer and heat in the winter and reduce unnecessary manual labor to a minimum.

A pipe-dream, you say? It is a dream that will come true somewhere and if it does not come true in Shanghai, the people of Shanghai are partially or even wholly to blame, right here and now.

Industrial

Shanghai can claim to be the great industrial city of China. Like all the treaty ports under foreign control Shanghai is an asylum for Chinese capitalists where industries may be established away from the destructive taxation and the extortion of Chinese officialdom in the interior, and at the same time it is neutral ground where foreigners may organize companies under the laws

* See FAR EASTERN REVIEW, September, 1918, for summary.

and the protection of their own governments. Yet the advantages of Shanghai as an industrial centre do not end at this point, for in addition the manufacturer here derives the benefit of a splendid situation with reference to transportation by sea and by inland waterways and railways, an abundant supply of cheap labor, cheap coal, and cheap electricity for power, and for his foreign employes the benefit of residence in a modern city of large European population where nearly all the facilities and conveniences of an Occidental city may be enjoyed.

The Shanghai Municipal Council supplies current for light and power to the International Settlement and environs, and does a very large and rapidly growing business. Before the War, prior to the shortage of shipping which resulted in the tripling or quadrupling of the price of coal in Shanghai, current for power was being supplied to factories at from Tls. 0.005 to 0.02 per kilowatt hour—at ordinary exchange, say one-half cent gold per unit, on the average. This was early in 1914, when coal was landed in Shanghai at from Gold $2.50 to $4.00 per ton of 2,240 pounds. Not only this, but the Council will lease motors at a rental based on 8 per cent. of the cost plus a percentage for wear and tear amounting to about 8 or 10 per cent. per year. The plant is now adding to its capacity of 19,600 K.W.A. French company provides current for power, light and tramways in the French Concession, and native plants give a like service in the Chinese suburb of Chapei and in the native city of Shanghai.

There are fourteen Chinese flour mills in Shanghai with a total output of 32,000 bags daily, several of the largest producing up to 5,000 bags daily. In addition there are two Japanese mills, of large size, although the capacity is not known. The mills have been built in recent years, to meet the newly acquired taste for white flour among the Chinese. While all the flour they produce cannot accurately be described as white, it is of a grade sufficiently good for Chinese. The mills reached their highest productive capacity at about the time imported flour became entirely too high in price to be used as a Chinese foodstuff, and before the flour trade had become settled down the War ensued, with resultant shortage of tonnage and embargoes on exports from the nations involved, when Chinese consumers of flour were forced to rely upon the Chinese mills. The principal difficulty in the way of turning out white flour of high grade is the remarkable quantity of filth and moisture picked up by the wheat on its way from the fields to the mill. However, the quality was sufficiently good for exportation to European countries for War needs, exports of this nature in 1917 amounting to 106,202 piculs (roughly 350,000 50-lb sacks) valued at Tls. 462,832. The total production of the Shanghai mills is not known, as local consumption cannot be ascertained, but the flour shipped away from Shanghai in 1917 totalled 2,982,713 piculs valued at Tls. 10,826,202.

Gas is supplied by a foreign company, the household rate being Mexican $2.40 per 1,000 feet, having been increased sharply in recent years due to the increasing cost of coal. Ice is supplied by a foreign plant, but native ice dealers manufacture ice in winter by filling low or dyked lands with a thin layer of water, the crude ice thus obtained being piled in high conical mounds under a thick layer of straw and kept until summer, and do a thriving business.

The city has a number of garages which build motor car bodies to order. Motor cars are decidedly popular in Shanghai with foreigners and wealthy Chinese alike, despite the fact that at current rates of exchange the price of gasoline is something like a gold dollar per gallon. There are numerous Chinese ships which build carriages and jinrickshaws and assemble bicycles.

A part of the large business in cottonseed and beans is carried on in Shanghai, and as a result there are four purely Chinese factories, one Chinese factory financed by Japanese, and one foreign factory for making cake and oil. They are able to crush about 6,400 piculs of seed and beans daily, the cottonseed being converted into beancake and oil in the proportion of about 40-50 per cent. of cake to 8-9 per cent. of oil. A paper mill here produces about 2,000 tons of news printing and cheap wrapping paper, with a Foudrinier machine built in Scotland.

Printing of the ordinary kind is carried on by a number of large Chinese establishments, and foreign printing plants turn out the finer grades of work. The large Chinese works, a development of recent years, which employ thousands of operatives and compile, edit and print textbooks, reference works and fiction are most interesting. About the only foreigners employed are an occasional proofreader or lithographer. The plants are equipped with machinery of various origin, purchased both new and second hand, some of it Chinese and Japanese copies of foreign machines, and one plant is equipped with a large offset press of Japanese make which had been copied from one of the earliest foreign models in the time when offset printing was in the experimental stage. These large Chinese plants train their own workmen,



Photo: H. Crowther

FOURTEEN COTTON FACTORY EMPLOYEES ON A BARROW, SHANGHAI

artists and compositors with a modification of the ancient Chinese system of apprenticeship. They are equipped with a few fonts of modern English types which are purchased from abroad, and cast their own "book" or "body" types in English, and all their smaller Chinese type, with hand casting machines. Some of the plants turn out creditable work.

The works of the Shanghai-Nanking Railway are at Woosung, the town mentioned as being at the mouth of the Whangpoo River some 15 miles below Shanghai.

About 41 plants equipped with electric power and modern machinery are engaged in the hulling and cleaning of rice, but each plant is on a small scale. One utilizes 160 horsepower for operating a battery of mills, but the majority have only from 2 to 10 machines.

Two foreign concerns cut and dress both imported and Chinese timber, foreign supplies coming mainly from the United States, and there are a number of small Chinese sawmills and woodworking plants.

There are 156 steam filatures in Shanghai engaged in winding silk. They employ 23,386 basins, which if worked the year round are capable of producing 40,000 piculs of silk. All except one are Chinese. A few of the filatures employ Italian supervisors.

A large soap and candle factory of foreign ownership and management is established in Shanghai, besides numerous Chinese soap and candle shops employing foreign equipment.

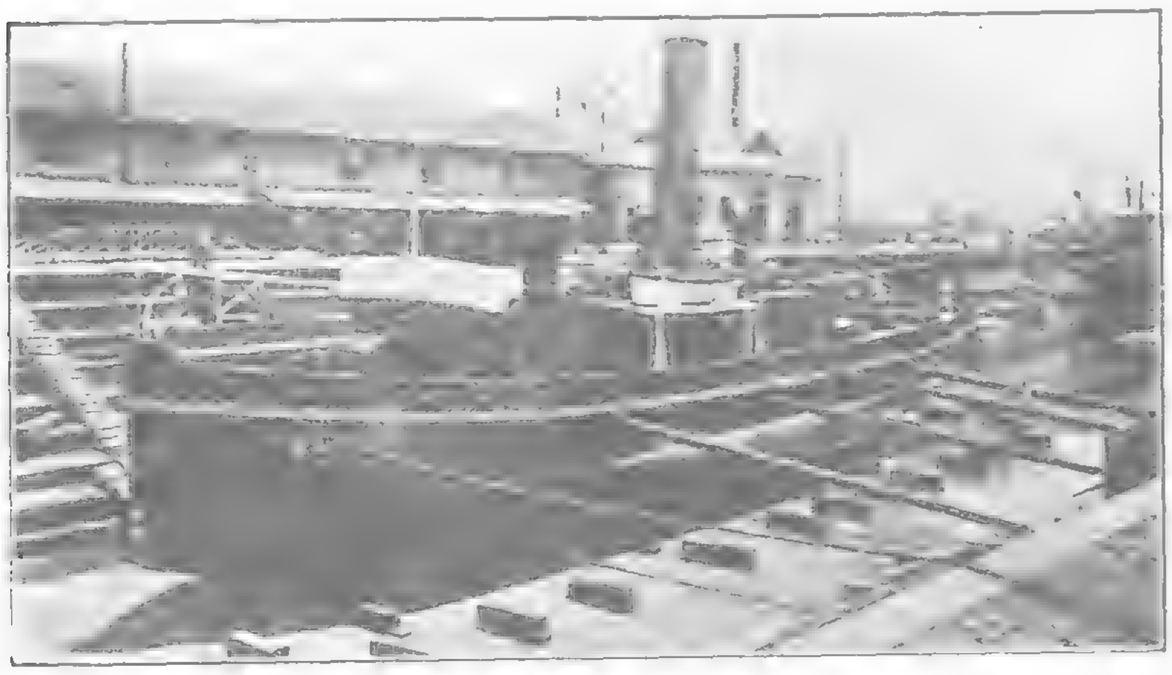
Telephone service is provided by a British concern, with magneto telephones of the Swedish pattern. The switchboard operators are Chinese men, who have a fair command of English. The cost of a connection is respectively Tls. 65 and Tls. 75 per year for desk and wall instruments. The number of connections is large, and the demand for instruments is now greater than the supply. A complete system of tramways operates over the city streets, the length of track measured as single line totalling 25.825 miles. The equipment consists of 90 motor cars, 70 trailers and 7 railless cars. Fares are in "coppers," the Chinese coin theoretically worth a hundredth part of a Mexican dollar but in reality being valued at 135 to the dollar, and are based on the zone system—the first class fares being in multiples of 3 "coppers" and the third class fares about one-third as much. There is no second class. The tramways' were opened in 1908. In 1909. passengers numbered 11,772,715 with receipts totalling $441,541 Mexican, and in 1917 passengers carried numbered 73,461,492 with receipts totalling $1,258,857 Mexican. In 1918 there were 78,683,690 passengers.

The large cigarette making plant of the British-American Tobacco Co. is in Pootung, across the river from Shanghai, and one Chinese concern manufactures cigarettes in Shanghai in a fair sized plant while there are several other Chinese cigarette factories of less importance.

Shanghai and its environs enjoy the benefit of four waterworks: the Shanghai waterworks, pumping a daily average of 14,270,000 gallons, the French waterworks company which supplies the French Concession, and Chinese pumping plants in Chapei and the native city.

Eggs are shipped and egg products manufactured by the Amos Bird Co., an American concern, with a modern and hygienic plant in the Yangtszepoo district of Shanghai. Smaller concerns also operate.

The Chinese Government operates an arsenal at Kiangnan, just outside the group of settlements and towns known collectively as Shanghai. An article concerning its facilities in the way of shipbuilding is included in this issue. Its munitions works include factories for making large guns, field guns of the Krupp pattern, and small arms, the latter turning out the standard Shanghai service rifle, the German Snider 1898 pattern. The plant includes steel furnaces and a rolling mill.



ONE OF THE DOCKS AT KIANGNAN

A large Chinese canning factory, which produces tinned game meat, fruit, etc., in either Chinese or foreign fashion, is located in Shanghai and does a thriving business.

The Kiangsu Chemical Works, a foreign concern, produces chemicals.

Shanghai is the centre of the yarn and piecegoods industry, and detailed information concerning this most important feature of industrial Shanghai is given in an article in this issue on Cotton Manufactures.

Four foreign concerns in Shanghai bottle aerated waters of all sorts.

The dockyards and shipbuilding works include the Shanghai Dock & Engineering Co., the New Engineering & Shipbuilding Co., and the Kiangnan (Arsenal) Works, of which mention is made in the following article. Several Chinese concerns build steel and wooden vessels, one of them having quite a large plant, and all have an unenviable reputation for copying European and American engines and machinery.

MERCHANTS.—The American Sales Corporation; American Trading Co.; Andersen, Meyer & Co., Ltd.; Arkell & Douglas, Inc.; Arnhold, Brothers & Co., Ltd.; The Barkley Co.; Bradley & Co., Ltd.; Butterfield & Swire; Calder-Marshall & Co., Ltd.; Caravan Commercial Co., Ltd.; China & Japan Trading Co., Ltd.; China Navigation Co., Ltd.; China Overseas Trading Co., Ltd.; Chinese-American Co.; Connell Bros. Co.; Dodwell & Co., Ltd.; The Robert Dollar Co.; Dowler, Forbes & Co.; Duncan & Co.; Fobes Co., Ltd.; Fearon, Daniel & Co., Inc.; Gaston, Williams & Wigmore; Geddes & Co., Ltd.; Getz Bros. & Co., of the Orient, Ltd.; Gibb Livingstone & Co.; Harvie, Cooke & Co.; John D. Hutchison & Co.; Ilbert & Co., Ltd.; Jardine, Matheson & Co., Ltd.; Knapp & Baxter, Inc.; Liddell Bros. & Co.; Mustard & Co.; Walter Nutter & Co.; Racine, Ackermann & Co.; Hugo Reiss & Co.; Reiss & Co.; Alex. Ross & Co.; Scott, Harding & Co.; Shewan, Tomes & Co.; A. E. S. Thompson & Co.; J. A. Wattie & Co.; Wells, Fargo & Co.; Westphal, King & Ramsay, Ltd.

Shipping and Shipbuilding in Shanghai

Shanghai is one of the great Chinese ports and stands high in the list of world ports; its tonnage in normal years, in entries, totals upwards of nine millions, and even during the war it has not been greatly reduced, coast trade and trade with neighboring countries being maintained. Great Britain to-day enjoys the reputation of being more interested in shipping in China than any other country, even including Japan. The supremacy of British shipping in Shanghai has been maintained over that of Japan, as the following figures showing the total number of tons entered will disclose:—

Flag	1915	1916	1917
Great Britain ...	3,388,056	3,287,163	2,797,598
Japanese	2,551,915	2,610,240	2,610,709

So far as the total tonnage into the port is concerned, the following table gives the entries of steamers under all flags for the past six years:—

Year	Entries
1912 ...	9,067,942 tons
1913 ...	9,597,478 ,,
1914 ...	9,301,875 ,,
1915 ...	8,249,745 ,,
1916 ...	8,198,150 ,,
1917 ...	7,682,869 ,,

The trend of shipping into Shanghai, with its distribution by flags, is given for the past three years in the following table, with figures in tonnage of total entries:—

Flag	1915	1916	1917
American	159,337	144,259	202,157
British	3,388,056	3,287,163	2,797,598
Danish	43,192	54,726	49,150
Dutch	68,915	56,047	108,715
French	153,350	208,078	203,856
German	406	7	0
Italian	0	38	27
Japanese	2,551,915	2,610,240	2,610,709
Norwegian	73,093	85,048	55,638
Portuguese ...	0	570	0
Russian	104,166	143,272	66,062
Swedish	23,766	29,620	13,346
Non-treaty powers ...	0	733	0
Chinese	1,683,549	1,578,349	1,575,611
Total	8,249,745	8,198,150	7,682,869
Sailing vessels ...	103,231	117,967	126,946
	8,357,976	8,316,117	7,809,815

The shipping of the port might be divided into four classes; Ocean going vessels, coast vessels, river vessels, and the junk which has taken a less and less important part in the trade of the port. Chinese have learned the advantages of the steamship and there are several Chinese steamship companies, running with more or less success, but none of them so successful as the foreign lines. The reason for this is not far to seek. The last few years of China's history have been full of turmoil and the Chinese steamships have been seized by the various parties until their business was seriously hampered.



SHANGHAI DOCK AND ENGINEERING CO., INTERNATIONAL DOCK

The coast trade is practically in the hands of three big companies, the China Navigation Company, the Indo-China S. N. Co., both of which are British owned, and the China Merchants S. N. Co., which is Chinese owned. Both the former lines have had their fleets reduced by the calls of the British Government, many of their vessels being sent to Mesopotamia, and the Chinese company has lost one or two steamers during the past few years in collisions. Despite this the two companies have maintained the British coast trade to a very high level.

From the above it will be gathered that a port doing such a big trade and clearing so great an amount of tonnage each year must of necessity be well equipped with docks. There are three companies in Shanghai. The Shanghai Dock and Engineering Co., the New Engineering and Shipbuilding Works, and the Kiangnan Dock and Arsenal Co.; the two former are British and the latter Chinese. All are capable of taking in their docks any of the ships that can enter Shanghai, of undertaking extensive repairs and of building new vessels. There is practically no limit to the size of ship that can be constructed in Shanghai providing the shipbuilding yards are furnished with the necessary berths, tools and equipment, but the necessary labour in the case of big construction would for a time be a serious question. The Kiangnan Dock is building vessels of eight thousand tons. The sizes of the various docks in Shanghai are as follow:

Shanghai Dock and Engineering Co., Ld.

Cosmopolitan Dock: 532′ × 77′ × 23′ depth of water on sill at spring tide.

International Dock: 528′ × 77′ × 22′ depth of water on sill at spring tide.

New Dock: 450′ × 74′ × 19′ depth of water on sill at spring tide.

Old Dock: 399′ × 53′ × 14′ depth of water on sill at spring tide.

Tunkadoo Dock: 355′ × 67′ × 15′ depth of water on sill at spring tide.

New Engineering and Shipbuilding Works, Ltd.

Yangtszepoo Dock: 577′ × 70′ × 21′ depth of water on sill at spring tide.

Kiangnan Arsenal:

Dock: 560′ × 70′ × 19′ depth of water on sill at spring tide.

It is only quite recently that the first concrete ship built in Shanghai was launched from the yards of the New Engineering and Shipbuilding Works, a ship built by Messrs. Arnhold Brothers and Co., Ld., in these yards. The trials of this ship proved satisfactory, but those interested in shipbuilding are not over sanguine of the success of concrete ships. In the very near future the Shanghai Dock and Engineering Co., Ld., will lay down the keels of standard ships the details of which they are now awaiting from home.

The future of the port as a shipbuilding centre holds out great possibilities, but the difficulty of obtaining land is the greatest handicap. Whether the Japanese, who are purchasing land on the river front as fast as they can make arrangements, will open out in this industry is a point which the future alone will decide, but there are great possibilities before the British firms.

At the same time much of the progress of this industry is dependent upon the depth of the River, certain parts of which preclude vessels of the largest type from coming right up the harbor.

Shanghai Dock and Engineering Co., Ltd.

As the history of the present Shanghai Dock and Engineering Co., Ltd., is not without interest, a brief sketch will be given of it here. In the 60s. of the last century two American shipwrights, S. C. Farnham and C. P. Blethen, started a general shipbuilding and repairing establishment in connection with the "Old Dock," under the style of S. C. Farnham & Co., and from this small beginning the industry rapidly grew in importance. The opening



TYPICAL SHANGHAI WHARF

of the Suez Canal and the entrance of Japan into the shipping field largely increased the number of steamer entries and clearances in the port, and a large amount of docking and repairs became necessary. In 1890 both the old partners in S. C. Farnham & Co. having died, their successors conceived the idea of converting the old business into a limited liability company, and this was finally accomplished in 1893. In 1892 another limited liability company, the Shanghai Engineering & Dock Co., entered the field and commenced to build a large and more commodious dock than had, up to that time, existed in the port. These two concerns amalgamated under the title of S. C. Farnham, Boyd & Co., Ltd., with a capital of upwards of five and a half million taels. The venture was not altogether successful, and lead to the winding up of the old company in 1906 and the formation of a new one in 1906, under the title of the Shanghai Dock & Engineering Co., Ltd., the existing concern.

The Shanghai Dock & Engineering Co. of the present day are shipbuilders and engineers, boilermakers and founders, who carry on shipbuilding, dry docking, and repairs and reconstructions of every description. Their yards and docks cover an area of 96 acres on a water frontage of 1½ miles, on either side of the Whangpoo. They are proprietors of five dry docks, three shipyards, and slipways for small craft. At all docks there is wharf accommodation and moorings are provided in the stream. Sheer legs for heavy lifts are a part of the equipment of each dock.

Light railway lines are laid throughout workshops and yards. The workshops are provided with the latest improvements, such as travelling cranes of 60 tons capacity, hydraulic and pneumatic machinery, and tools. All the auxiliary gear for ships, including steam steering gears, dynamos, windlasses, winches, evaporators and distillers, pumps of all types, etc., are made in their own shops; and land and marine engines and boilers of all kinds are in stock or in progress at all times.

Among the recent works of their shipbuilding plants may be mentioned six steel cargo steamers now under construction, and the U. S. A. Collier No. 1, produced in their yards for the Quartermaster's Department of the United States Army Philippines Division, which was delivered in Manila in May, 1918. The vessel is 350 feet long between perpendiculars, 50 feet moulded breadth and 22 feet moulded depth, and is designed to carry 6,000 tons of coal.



SHANGHAI DOCK AND ENGINEERING CO., POOTUNG YARDS

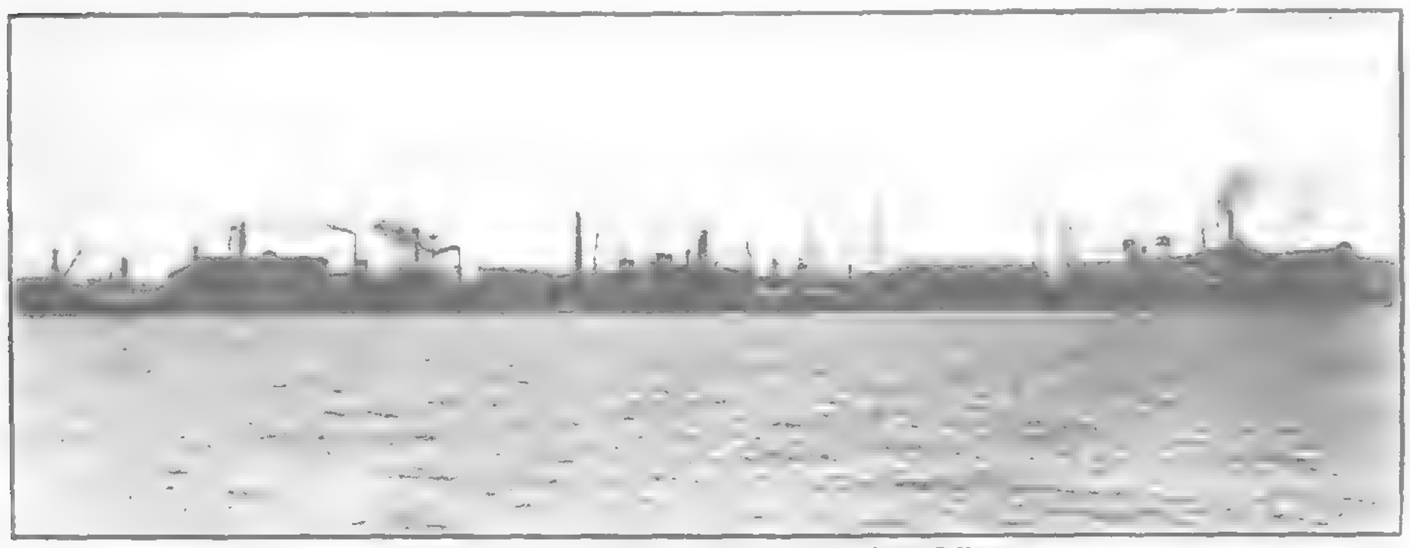
The Company carries on salvage work of all descriptions, and possesses powerful salvage gear, pumps, boilers, and a large staff of experienced divers and European foremen always ready for immediate service.

A detailed description of their five drydocks is given in the table below:—

Names	Length on Blocks	Breadth of Entrance	High Water Depth of Water on Sill
Cosmopolitan Dock	532-ft.	77-ft.	24-ft.
International Dock	528 ,,	77 ,,	23 ,,
New Dock	450 ,,	74 ,,	21 ,,
Old Dock	399 ,,	53 ,,	16 ,,
Tunkadoo Dock	350 ,,	67 ,,	16 ,,

New Engineering and Shipbuilding Works

The plant of the New Engineering & Shipbuilding Works, including yards, slips and dry dock, are on Yangtszepoo Road, on the Shanghai side of the Whangpoo River, occupying an area of 100 mow of land with a river frontage of 1200 feet, all of which is bunded, forming wharves for the berthing of vessels undergoing repairs, etc. The property is within ten minutes' reach either by road or river from the Bund, or heart of the city.



VIEW OF WORKS, DOCK AND WHARVES

The Works, comprising two yards known as "Dock Yard" and "Vulcan Yard" are equipped with up-to-date plant, which includes an installation of hydraulic riveting and flanging machinery, pneumatic tools, electric drilling machines and electric and oxy-acetylene welding plant, for the quick execution of repair work. No expense has been spared to secure a high standard of efficiency, and the Company is well able to undertake any contract which would come within its scope as engineers, millwrights, shipbuilders, boilermakers and electricians. Each department is under the supervision of a competent European staff.



STEEL SINGLE SCREW CARGO STEAMER
(Classed 1, A1, + N.V.)
Dimensions 254-ft. 6-ins. by 37-ft. by 17-ft. Draft loaded 15-ft. 3-in.
Speed 11½ knots.



STEEL AUXILIARY MOTOR SCHOONER
(Classed 100 A1, Lloyds)
Dimensions 135-ft., by 30-ft., by 14-ft. 6-in. Draft loaded 12-ft 6-in.

Both yards have independent machine shops, blacksmith, coppersmith and pattern-makers' shops, foundry and boiler shops, moulding lofts, godowns and offices. The whole of the equipment is electrically driven, the shops are spacious and well lighted.

The machine shops contain all the plant necessary for every description of steam and motor work, in addition to being able to handle the requirements of local factories and installations.

The blacksmith shops contain an ample number of fires, various steam hammers, and suitable cranes.

The coppersmith shops are provided with a complete plant of drilling machines, hydraulic pipe benders, rolls, punching and shearing machines, etc.

The pattern-makers' shops are equipped with hand and circular saws, planing machines, lathes and mitreing machines.

The extensive foundries have cupolas of the "Thwaites" rapid pattern installed with blasts from "Roots" blowers. Castings up to 10 tons can be made. Overhead travelling cranes of 15 tons capacity facilitate work in this department.

The boiler shops are very well equipped and contain the largest machinery in the works, comprising heavy and light punching and shearing machines, drills, countersinking machines, plate edge planing machines, heavy rolls for bending plates, and "mangles" for straightening plates. Conveniently situated are two complete hydraulic plants, with fixed and portable riveters, as well as hydraulic flanging machines with arrangements for flanging Lancashire boiler flues. All this equipment is motor driven. The carpenters' shops are well provided with every description of woodworking machinery.

In addition, there is also a motor department where a special type of marine motor known as the "Speedy" is manufactured which has become a very popular engine on the market. In the godowns a large and varied stock is carried of everything that can conceivably be said to appertain to the work undertaken by the firm; and in the stock-yards are storage sheds where all classes of raw materials such as plates, angles, girders, etc., are stored.

The dry dock is of such dimensions as easily to accommodate most of the largest vessels visiting the port, and it can be pumped out in two and a half hours, which time is generally utilized for scrubbing down hulls preparatory to inspection. The particulars of the dock are as follows:—

Length on blocks	570-ft.
Length overall	577 ,,
Entrance	70 ,,
Width of sill	60 ,,
Depth to floor	28 ,,
Depth on sill (H. W. O. S. T.)...	21 ,,
Depth on 3-ft. blocks (H. W. O. S. T.) ...	21 ,,

In addition there are shear legs at the head of the dock capable of taking lifts up to 70 tons and a complete salvage outfit which is held in readiness for all cases of emergency.

The various classes of engineering projects that the Company has successfully undertaken in the past cover a large range, from the smallest pleasure launches to a vessel of over 3,400 tons, land and marine engines, boilers, etc., etc. Particularly interesting are the two distinct types of vessels built in 1918, two 2,050 ton D.W. single screw steel cargo steamers, and a steel motor schooner of 550 tons D.W. Further large orders have been placed with the

Works for similar steamers, the construction of which has already been commenced.

This increasing demand, and the confidence the Directors of the Company have in the future of Shanghai to become the chief engineering and shipbuilding centre of China, has necessitated an extension of the Works, and a new site on the opposite side of the river, measuring over 80 mow with about 600 feet of river frontage, has been purchased. The development of this acquisition is already in progress and a quantity of machinery ordered to meet the demand for which this extension is required.

Kiangnan Dock and Engineering Works

The Kiangnan Dock and Engineering Works has recently made extensive improvements and installations of the latest types of labor-saving machinery.

It has facilities for making repairs to the largest steamers that enter this port as well as docking them. It has built all types of vessels that are being employed in coast-wise and river services. It has constructed gunboats and patrol boats for the Chinese Government, and at present it is under contract to build for the American Emergency Fleet Corporation four 10,000 ton D.W. cargo steamers.

Situated about three miles up the Whangpoo River from the Custom House, the works have 260 mow (or 43 acres) of land with a river frontage of over half a mile. Its shops, stores and offices take up a total area of 328,154 square feet.

Originally the dockyards worked exclusively for the Chinese Government; but fourteen years ago the business was put on a commercial basis in compliance with the great demand of Shanghai for another efficient dockyard to accommodate its ever increasing shipping. So now the Kiangnan Dock—a government owned and controlled enterprise though it still is—is free to dock, repair and build vessels for Chinese and foreign shipowners exactly in the same way as all the other local dockyards.

The management and policy of the works are controlled by the Directors, Messrs. K. N. Lew and K. W. Kwong, while the technical staff—with Mr. R. B. Mauchan, the Engineer Superintendent, as the chief—is composed of foreign experts, fourteen in number, and nine Chinese engineers who received their training in England and America, many of whom hold the highest foreign diplomas and degrees gained in competition with others.

The Kiangnan Dock has built, on an average, one ship every two weeks for the last thirteen years. The s.s. *Kiang Wah*, of the China Merchants Steam Navigation Co., a ship with a speed of 16½ knots, is the largest vessel it has built. The many light draft steamers built by this concern for the Chungking service—vessels of special design, which require extraordinary light scantlings and large power to negotiate the dangerous rapids of the Upper Yangtze River—have been extremely successful. The works are at present engaged in constructing four 10,000-ton deadweight steamers for the American Government. The loaded displacement of these vessels will be upwards of 14,000 tons. These are the largest vessels ever attempted in China, and the dockyard officials are to be commended for their enterprise in undertaking such useful work at the present time when tonnage is much needed.

The length of the dry dock on blocks is 545 feet with a depth of 19 feet on sill (springs). The river in front of the works has been dredged especially by the Whangpoo Conservancy to give sufficient depth of water for the largest vessels entering the port.

The works have six shipbuilding berths for steamers of 500 feet or more, besides numerous berths and slips for smaller vessels. The river front is a continuous line of wharves, equipped with sheer legs and cranes.

The machine shop, comprising the machine shop proper and the extension, covers 55,730 square feet. It is installed with lathes, milling machines, planners, drilling machines, etc. The largest lathe can turn a shaft 80 feet long and articles 10 feet in diameter; the largest planer, planes articles 10 feet wide by 10 feet high and the overhead cranes, four in number, are 40, 20 and 10 tons respectively.

The boiler and ship shops are two in number, one for hull work and the other for boilers, both capable of doing ship work. The total floor area is 56,500 square feet. The new frame furnace is capable of taking in the longest frame bars for the biggest boats, and the electric furnace has a capacity of one and one-half tons.

The foundry, served with powerful cranes, has five cupolas. two of which have each a capacity of eight tons.

Falling in line with the modern practice of fuel economy and general efficiency, all the heavy machines are driven by electricity.

Not satisfied with building the ordinary marine boilers, the Kiangnan Dock has acquired the patent rights to build the Howden's Sectional Boilers in China, and is also the sole manufacturer of the Gorham gas and oil engines for stationary and marine purposes. It is turning out engines in the following sizes: 5 H.P., 10 H.P., 15 H.P., 20 H.P., 35 H.P., 50 H.P., 70 H.P. and 100 H.P.; larger sizes up to 500 H.P. on special orders. Engines of or above 25 H.P. may be operated on gas producers, which experiments have proved to be great economizers of fuel.

To sum up, the Kiangnan Dock, with its excellent equipment and facilities, is in a position to undertake efficiently all kinds of work in connection with shipbuilding, ship-repairing, boiler-makinging, motor-making and general engineering. While already extensively enlarged, its scheme of expansion calls for even greater improvements in the next few years with a view of making it capable of building even larger ships than those now under construction.



WEST WHARF, KIANGNAN DOCK

Soochow

Soochow is an ancient and important mart in Kiangsu Province, on the Shanghai-Nanking Railway, 53 miles above Shanghai and 139 miles below Nanking. It is on the Grand Canal, and is connected with Shanghai by Soochow Creek as well by the railway. The city is surrounded by a wall which is circled by a canal; the wall is about 3½ miles in length and 2½ miles in breadth. The railway facilities and the Japanese and International concessions are outside the wall.

Soochow and Hangchow are famed among Chinese for the beauty of the surrounding scenery and other virtues less appreciated by foreigners, and in a popular proverb taken from the works of a Chinese poet are compared with heaven. Near Soochow is the lake known as Tai-hu, covering an area of 837 square miles, dotted with islands, which is the summer playground for numerous Chinese; the hills in the region are decorated with pagodas; and these attractions and the many public and private gardens in the old Chinese fashion have earned a favorable reputation among the natives.

COMMERCE AND INDUSTRY.—The city is an important producer of silk, and this commodity, with cocoons, rice, green tea and rape-seed cakes, form the export trade. The exports through the Maritime Customs in 1917 amounted to Tls. 14,619,047, the imports of foreign goods totalled Tls. 3,273,939, and the imports of native goods Tls. 1,034,770. These figures are misleading, as business in value amounting to several times the amounts given is done through Shanghai.

TRANSPORTATION FACILITIES.—In addition to the railway mentioned above, the transportation facilities of Soochow consist of numerous steam launches towing native cargo and passenger boats, connecting the city with Shanghai, Hangchow, and hundreds of lesser markets on the lake, the Grand Canal, and other waterways.

Chinkiang

Chinkiang, in Kiangsu Province, which was opened as a treaty port in 1861, is at the junction of the Grand Canal with the Yangtze River, lying on the south bank of the Yangtze with the Grand Canal as its southern boundary. Chinkiang is a port of call for nearly all Yangtze River steamers, and is also connected by railway with Shanghai, a distance of 166 miles, in the one direction, and Nanking, a distance of 43 miles. The port has daily steamer service to Nanking in the opposite direction and Shanghai, and frequent service to Chingkiangpu, on the Grand Canal north of the Yangtze.



Photo: F. J. Mayers

APPROACHES TO THE HULKS AT CHINKIANG

The importance of Chinkiang is declining, although the port still does an excellent import and export trade. Exports consist principally of beancake, beans and peas, egg albumen and yolk, hemp fibre, wheat flour, peanuts, dried lily flowers, native medicines, peanut oil, sesamum seed oil, silks and tallow. In 1917 the exports totalled Tls. 9,147,299.

Imports in 1917 amounted to Tls. 8,866,872. Cotton piece goods accounted for much of this, but a wide variety of other foreign merchandise was imported.

Chinkiang is one of the great egg markets of China. In the neighbourhood are some hundred albumen factories, their product reaching foreign markets through Shanghai. Before the War the egg business was largely in the hands of a German firm. The largest factory is at Hsuchow, under Chinese ownership. Most of the albumen, as well as fresh and preserved eggs, is transported through transit pass privileges as well as by payment of likin, and for this reason the total trade may not appear in the Chinkiang figures of exports. However, the importance of the trade may be learned from the total figures of exports to foreign countries. The total exports of dried eggs in 1917 was 405,019 piculs valued at Tls. 11,999,684—roughly 27,250 short tons of 2,000 pounds valued at twelve million gold dollars. The principal markets were:—

	piculs	Tls.
United States	154,541	6,055,042
Great Britain	216,464	4,868,333
France	9,255	430,727
Australia	13,335	200,759
Japan	3,747	149,054
Canada	4,974	219,997
Italy	1,363	31,175

The value of the trade in recent years has expanded enormously, as shown by the following table:

	piculs	Tls.
1912	125,167	1,984,578
1913	155,973	2,943,956
1914	125,202	2,555,622
1915	190,967	4,864,925
1916	288,346	7,702,403
1917	405,019	11,999,684

In 1912 the chief purchaser was Germany, with 66,587 piculs valued at Tls. 1,060,411, by far the greater part of the trade. In 1913 Germany took 84,709 piculs valued at Tls. 1,555,282, and in 1914 purchased 55,818 piculs valued at Tls. 932,089, disappearing from later tables.

The share of the United States has been as follows:—

Year	Purchases Weight piculs	Purchases Value Tls.	Of the total trade of: Tls.
1912	4,976	243,559	1,984,578
1913	9,150	352,608	2,943,956
1914	14,166	602,416	2,555,622
1915	27,257	1,415,413	4,864,925
1916	40,427	1,957,525	7,702,403
1917	154,541	6,055,042	11,999,684

It will be observed that America has taken the larger and an increasing share of the trade under the impetus of war needs. This is in spite of the fact that in 1917 the United States Government forbid the import of eggs containing traces of zinc, as one of the preservatives under the ban of the Pure Food and Drugs Act, and as dried eggs produced by native factories are cooked in pans that transmit a trace of zinc to the product, the export from such factories fell off sharply.

At Hankow are five Chinese, one Belgian and five German albumen factories. At Tientsin are seven such factories under Chinese ownership and another plant known as the Sino-American Industrial Company, under American management. There is a Chinese factory at Wuhu and a German factory at Foochow. The most important plant is that of the Amos Bird Egg Company, at Shanghai, where fresh and dried eggs are packed under the most modern and hygienic conditions.

Chinkiang is one of the leaders as well in the export of fresh and preserved eggs. The total volume and value of this trade from all Chinese ports in recent years has been as follows:—

Year	Quantity	Value Tls.
1912	291,705,236	2,369,946
1913	363,202,144	2,788,061
1914	395,489,528	2,646,301
1915	344,329,000	2,635,419
1916	354,011,000	2,970,837
1917	247,400,000	1,870,297

The principal distribution of the trade has been as follows:—

Exports to	Value in Taels 1912	1913	1914
Hongkong	803,288	799,023	706,791
Singapore, Straits, etc.	151,282	170,696	151,387
Great Britain	7,046	5,404	114,265
Russia, by land frontier	118,149	160,217	179,469
Russia, by Amur ports	341,897	502,624	455,856
Russia, by Pacific ports	258,951	285,426	145,124
Japan	553,349	765,266	696,950
United States	2,412	13,111	271,815

	Value in Taels 1915	1916	1917
Hongkong	767,838	733,776	600,665
Singapore, Straits, etc.	113,003	109,368	72,729
Great Britain	97,507	254,732	166,868
Russia, by land frontier	142,179	450,194	194,118
Russia, by Amur ports	458,882	256,302	100,197
Russia, by Pacific ports	232,488	416,010	189,693
Japan	707,184	580,906	427,341
United States	60,626	24,983	7,942

It must be borne in mind that these figures include both preserved and fresh eggs. The United States does not enter into the market for eggs preserved in liquid form, as preservation is only



Photo: F. J. Mayers

JUNKS AT CHINKIANG

possible by means forbidden by the Pure Food Law of that country. Neither does it enter largely into the fresh egg market for the reason that the distribution of unpreserved eggs abroad depends upon cold storage facilities or cold weather. As the cold storage equipment on vessels calling at American ports from China is almost nil, and as eggs in cold weather are scarce and high in price, the purchases of Chinese fresh eggs in the United States amount to very little. Cold storage is not, of course, necessary, if shipments are made over the northern Pacific route.

The United Kingdom is more favorably situated, as a number of vessels in the Chinese trade calling at ports in Great Britain are equipped with cold storage of great capacity. The figures of purchases by Great Britain should be added to those of exports to Hongkong.

Japan is in an excellent position through the nearness of its ports to the egg producing centres of North China, making possible quick transportation almost the year through. It will be observed that Japanese imports from China have fallen off, due principally to the advancing price of eggs in China, as, of course, Japan produces eggs cheaply in normal times. Much of the Japanese purchases of fresh eggs are exported to America, as Japanese ships on the North American lines have a limited amount of cold storage equipment. Incidentally, the 1918 figures if available would probably show Japan as one of the large purchasers, as the advancing cost of eggs together with the general advance in the cost of foodstuffs in that country, has lately forced them to rely upon China in egg purchases.

The large exports into Russia are made possible by the cool weather prevailing in that country for a large part of the year.

Chinese eggs are also packed in tins, in liquid form, and frozen. From 1912 until 1914 this industry was carried on at Nanking and Hankow; from 1915 until the present day it has also been carried on in Shanghai. The total trade has been as follows:—

	1912 piculs	Tls.	1913 piculs	Tls.
Great Britain	42,600	336,966	63,302	500,711
France	—	—	8,364	66,163
Russia, Amur ports ...	—	—	—	—
Canada	—	—	4,444	35,149
United States	—	—	585	4,631
Australia	—	—	—	—
	42,600	336,966	76,695	606,654

	1914 piculs	Tls.	1915 piculs	Tls.
Great Britain	156,090	1,279,820	99,705	822,595
France	—	—	—	—
Russia, Amur ports ...	162	17,955	22	2,327
Canada	6,127	48,459	6,446	51,020
United States	—	—	—	—
	162,379	1,346,234	106,173	875,942

	1916 piculs	Tls.	1917 piculs	Tls.
Great Britain	174,530	1,582,178	25,137	297,974
France	157	1,243	—	—
Russia, Amur ports ...	4	464	—	—
Canada	1,240	24,804	3,987	97,076
United States	5,192	49,548	5,517	53,039
	181,123	1,658,237	35,671	448,089

SHIPPING FACILITIES.—Entrances and clearances of vessels in 1917 totalled 7,333,450 tons and 5,240 ships. The British flag predominated with 2,136 ships of 3,252,234 tons, Japan coming next with 1,122 vessels of 2,239,836 tons, China next in order with 1,170 vessels of 1,683,026 tons, the remainder being divided among other nationalities.

Steamship companies calling regularly at Chinkiang have provided themselves with hulks, but as the north bank of the Yangtze is being eaten away and the south bank is being silted, these hulks have to be shifted farther and farther out and the jetties must be extended.

An interesting development is that recently the competition of the railway is seriously affecting the river steamer traffic.

APPROACH AND ENTRANCE TO HARBOR.—Chinkiang was opened to Foreign Trade as a Treaty Port under the terms of the Tientsin Treaty with Great Britain of 1858. The office of the Maritime Customs commenced to function in April, 1861. The Port is situated on the South Bank of the Yangtze River, astride the southern section of the Grand Canal; the entrance to the northern section of this once important waterway being at Kwachow about three miles—ten *li*—up river.

Chinkiang is about 150 miles from the mouth of the Yangtze. From the east the approaches to the harbor are either by the Silver Island Pass (south) or the Ta Sha Round Channel (north of Silver Island: the Chinese name of which is Chiao Shan). Down-river steamers approach the Port by the channel north of the rapidly extending island called Cheng Jen Chou and round-to below the Spit Light vessel.

River steamers usually take the southern, and ocean steamers the northern channel. In the high water season the current in both channels is of great strength; especially in the south channel.

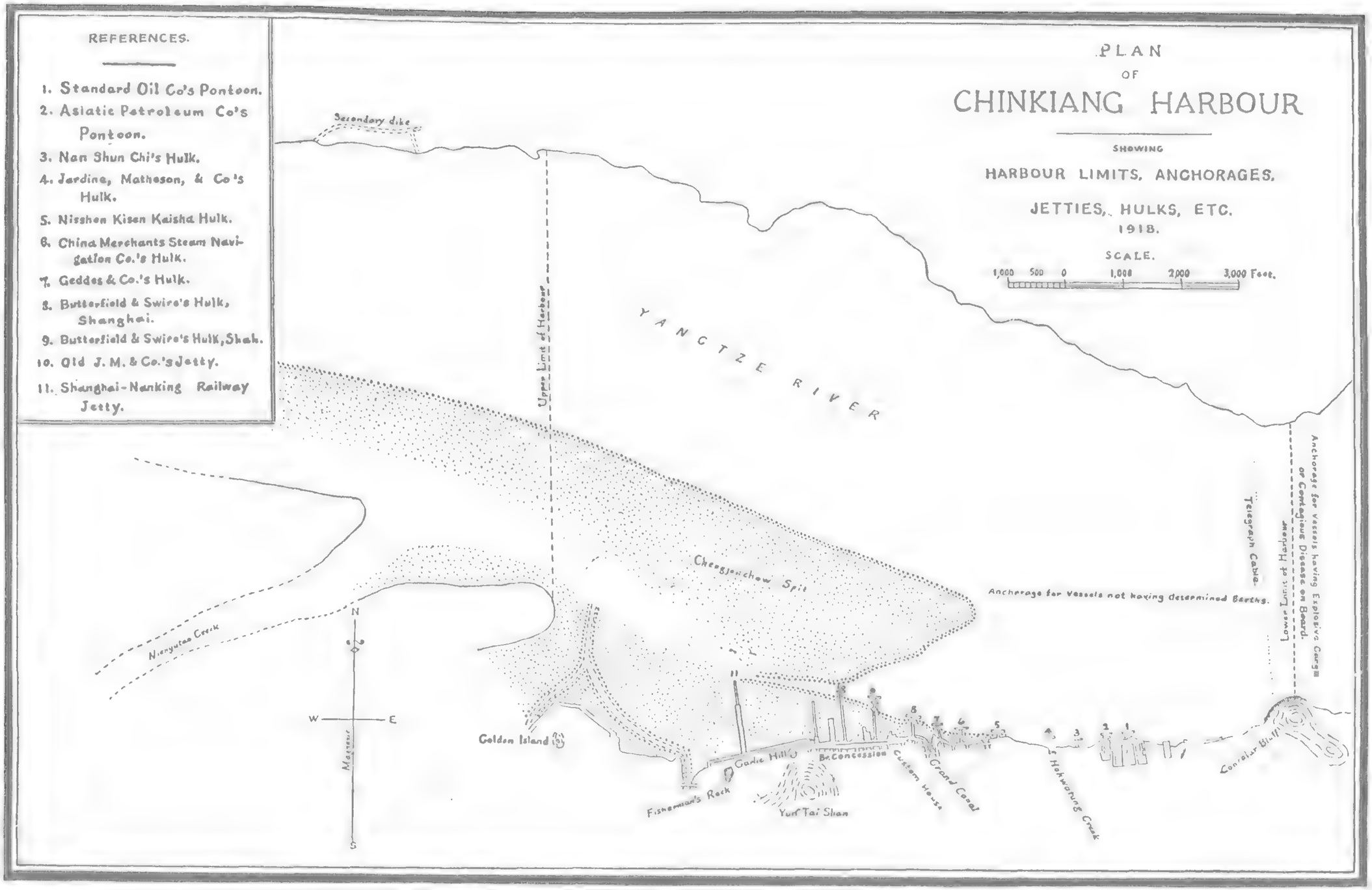
Regular river steamers carry their own pilots: outside steamers employ Yangtze river pilots, whose headquarters are in Shanghai.

There are no tugboats in the Port available for hire. Occasionally tugboats visit the port for special reasons.

GENERAL PORT CONDITIONS.—During the past ten years the highest recorded level of the river, in relation to the fixed zero mark, was 20-ft. 6-in. on the 11th September, 1911; and the lowest 9 inches on the 9th January, 1914. The zero point is 23 feet below the benchmark in front of the Custom House; which is about 2 feet above the level of the bunding. The average tidal range is approximately 2 feet 9 inches spring tides, and 1 feet 7 inches neaps; but this varies considerably according to the state of the river, and strength of the current.

The harbor limits and anchorage lie between a line due north from Consular Bluff (called in Chinese Kan Lu Ssu), on the east, and another line due north from Golden Island Pagoda on the west.

River and coast steamers, having determined berths, may, on arrival, proceed to them without stopping; unless they have dangerous or explosive cargo, or infectious disease on board; in


REFERENCES.
1. Standard Oil Co's Pontoon.
2. Asiatic Petroleum Co's Pontoon.
3. Nan Shun Chi's Hulk.
4. Jardine, Matheson, & Co's Hulk.
5. Nisshen Kisen Kaisha Hulk.
6. China Merchants Steam Navigation Co.'s Hulk.
7. Geddes & Co.'s Hulk.
8. Butterfield & Swire's Hulk, Shanghai.
9. Butterfield & Swire's Hulk, Shah.
10. Old J. M. & Co.'s Jetty.
11. Shanghai-Nanking Railway Jetty.
PLAN
OF
CHINKIANG HARBOUR
SHOWING
HARBOUR LIMITS, ANCHORAGES,
JETTIES, HULKS, ETC.
1918.
SCALE.
1,000 500 0 1,000 2,000 3,000 Feet.
Secondary dike
Upper Limit of Harbour
YANGTZE RIVER
Anchorage for Vessels having Explosive Cargo or Contagious Disease on Board.
Lower Limit of Harbour
Telegraph Cable
Anchorage for Vessels not having determined Berths.
Chengjiangchow Spit
Niangutao Creek
N
W
E
S
Magnetic
Golden Island
Gordie Hill
Fishermen's Rock
Yuet Tai Shan
B.R. Concession
Custom House
Grand Canal
Hokwang Creek
Consular Bluff

which case they have to anchor below the eastern harbor limits.

Vessels which have no determined berths are required to anchor at least 350 yards outside—to the northward—of the line of hulks, and are not allowed to shift from their berths or leave the anchorage without a special permit; except when leaving the Port after having obtained their clearance papers.

Hulks and pontoons take the place of wharves. A line of them extends, at intervals, from the upper end of the British Concession to the Standard Oil Company's installation. Shipping companies and general merchants have their own godowns (warehouses), mostly near the river front. Arrangements for the storage of cargo may be made with the owners.

PORT REGULATIONS.—There are no special local quarantine regulations. When it is necessary to take action, the general procedure of the other Treaty Ports is followed.

Vessels arriving are boarded by Customs officers, and dealt with as at all other Yangtze Ports. The entry and clearance of river steamers, and regular traders also follow the usual course. Vessels which do not hold a Yangtze River Pass, issued in Shanghai, must obtain one here. The ship's papers are deposited here and returned in exchange for the River Pass when the vessel returns from her up-river destination.

PORT FACILITIES.—There are no docks, wharves or permanent piers. Owing to the great rise and fall of the river (usually about 17 to 19 feet annually) hulks, pontoons and temporary jetties are employed instead. These belong to and are operated by the owners—shipping and steam-launch companies, etc. There are no cranes, or other equipment for handling heavy goods. Some steamers are fitted with such equipment, which could be used to land or ship heavy articles.

Lighterage to or from vessels at anchor in the stream is performed by the usual native type cargo junk or sampan. Their number is uncertain, but is sufficient for the requirements of the Port. They are native owned and operated. Handling charges are roughly one cent per package, taken as 120 catties in weight; which the shippers or consignees pay.

The Custom House is on the river front (Chinese Bund) between the British Concession and the Grand Canal, within easy reach of business houses, hulks, etc. There are no Customs' warehouses. Import and export cargo is examined either in the Customs' examination shed or on the hulks, and released by the Customs on payment of duty, if leviable. Coolie hire is arranged and paid for by the owners of the cargo.

There are no cold-storage or public godowns. Merchants maintain their own godowns, which may be hired in whole or part at current rates. Handling costs of cargo range from one cent Mex. per unit of 120 catties in the high-water season to 3 cents in the low (owing to the additional distance to be covered.) Insurance rates are about Tls. 4.50 per thousand taels per annum.

Both coal and oil fuel may be obtained; the latter from the installations of either of the locally represented oil companies (Standard Oil, and Asiatic Petroleum Companies.) Vessels of ordinary size can lie alongside the Companies' pontoons, from which pipe-lines connect with the tanks ashore. Coal is delivered from yards ashore by lighters. Coaling in this port is expensive, and only resorted to in an emergency.

There are no dry or other docks; and only minor repairs can be made locally.

The British Concession has its own water supply, obtained from the river, and is also electrically lighted. The native city and suburbs have an independent electrical supply, but no water supply. There are no regular water boats for supplying ships.

PORT CHARGES AND EXPENSES.—There is no special local tariff of charges. Consular and Customs' fees are the same as at other ports. The fees of the Port Health Officer vary according to services rendered. Ash boats are provided for collecting ashes from inland launches. Launches on regular runs pay a fee of $2 monthly.

LOADING AND DISCHARGING.—Similar conditions as at other Yangtze ports. Practically all cargo handled by coolies. Their number varies with the requirements of the moment; but is generally sufficient. All other conditions are as customary in China.

RAILWAY TERMINAL FACILITIES.—A branch of the Shanghai-Nanking Railway runs to a riverside station, west of the British Concession, where a small quantity of cargo is handled.

COASTAL AND INLAND STEAMER AND BOAT SERVICE.—The vessels visiting the Port consist of (1) Regular river steamers trading between Shanghai and Hankow, or further west; (2) occasional ocean steamers, with cargoes of oil—in bulk or case; or coal, and sometimes sugar; (3) inland water vessels—steam launches and their tows, trading with places on the Yangtze, and with inland places, by several different routes; oil distributing tank-vessels; and many various types of native craft. Deep sea steamships seldom visit the port, except as stated in the foregoing.

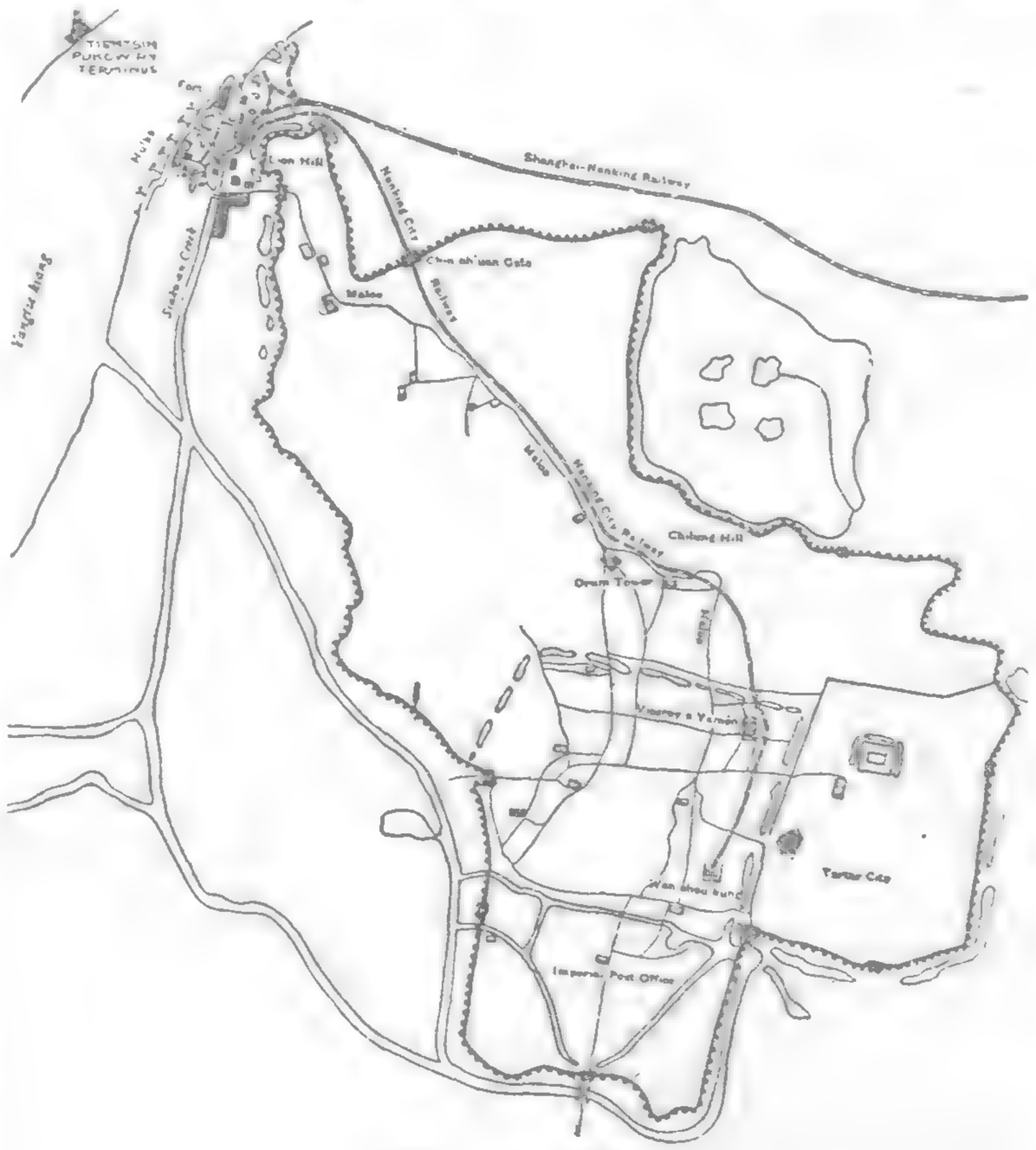
GENERAL REMARKS.—Owing to the silting up of the Yangtze River and the Grand Canal the trade of the Port is rapidly declining, and unless measures are promptly taken to deal with the situation it will not be long before access to the British Concession will be impossible for steamers in the low-water season. Some photographs of the river-frontage off the Concession during the winter, 1917-18, which accompany this report, show the state of the harbor then. The urgent necessity of conservancy works is generally recognized; but nothing has yet been done, or even seriously proposed, to save the Port from extinction. The extension of the Cheng Jen Chow Spit down river has been very rapid. In 1905 only a small bank existed, some distance above Golden Island. There is now a large and rapidly growing island which extends well below the Concession. Even now it is not too late to save the situation; but naturally the cost will be infinitely greater than it would have been had the matter been attended to earlier.

MERCHANTS.—Arnhold, Bros. & Co., Ltd., Butterfield & Swire; Jardine, Matheson & Co., Ltd.; Mitsui Bussan Kaisha, Ltd.

Nanking

Nanking, in Kiangsu Province, is situated on the south bank of the Yangtze at a point 193 miles by rail and 210 miles by water above Shanghai and 375 miles by water below Hankow. Nanking was named as one of the treaty ports in the French Treaty of Tientsin in 1858, but actual foreign trade there was not begun until May, 1899. The long delay is accounted for by the fact that Nanking was in the possession of the Taiping rebels from 1853 to 1864, and by the time the rebels were overthrown and order was restored the nearby ports of Chinkiang and Wuhu had acquired the dominant position in the trade of the territory.

Nanking was the capital of China under the six dynasties ruling between the fourth and sixth centuries, and again, for a short while, under the Ming Dynasty, in 1368. The port is rich in historical association. Whatever Nanking possessed of architectural beauty or importance perished in the Taiping rebellion, when the port suffered badly through the long domination of the rebels. The famed Porcelain Tower, the most beautiful pagoda in China, was razed during this period of its history. The celebrated mausoleum of the Emperor Hung



PLAN OF NANKING

Wu, founder of the Ming Dynasty, who died in 1398, with other tombs and monuments known generally as the Ming Tombs, are just outside the eastern walls. There are numerous other inter-



THE BUND AT NANKING SHOWING ONE OF THE HULKS FOR LANDING AND STORAGE PURPOSES

esting ruins in or near the city, including the remains of Hung Wu's palace, and these form an attraction for tourists and students.

Nanking has long been a seat of Chinese culture, and to the schools of ancient learning have been added modern institutions, such as the Chinese Naval College, and foreign schools such as the Nanking University of the Central China (Methodist Episcopal) Mission. Buildings in foreign style, including government offices and native shops, are beginning to appear, and roads are being laid for short distances. Nanking was the scene of much fighting in the revolutionary campaign, during October and November, 1911, which led to the fall of the Manchu Dynasty and the foundation of the Republic. The whole city was occupied, the Manchu City was sacked and burnt, and Nanking became the seat of the Provisional Government with Dr. Sun Yat-sen as President Here the Republican Constitution was drawn up and promulgated. and the Revolutionary leaders sought to make Nanking the capital of the Republic. In February 1912 Dr. Sun handed over the Presidency to Yuan Shih-kai, in connection with the abdication of the Manchus and the establishment of a Government in Peking. In 1913 a military outbreak occurred which developed into an armed rebellion against the Peking Government, and Nanking was besieged by Government troops from 15th August to 1st September, when it capitulated. All of Hsiakwan had been burnt meanwhile, and the looting of Nanking followed. Advantage of the loss was taken to rebuild Hsiakwan somewhat on modern lines. A large garrison of Government troops is now maintained in the city.

Nanking has always been a favorite place of abode of numerous retired officials and merchants from the surrounding country, and for this reason there has always been a steady demand there for foreign goods of many kinds. As a distributing centre for imports and an outlet for produce, however, Nanking has not the geographical advantages of Chinkiang and Wuhu and is not likely to become an important centre for foreign trade unless local conditions are modified by the introduction of new railways. Of these several are proposed, two with their terminal at Pukow, on the opposite bank, and it remains to be seen whether Nanking will share the prosperity of Pukow when the railways are constructed. For the present much of the traffic which comes down on the railway from Pukow, for Shanghai, is transhipped from Pukow direct, crossing the river and proceeding to the coast by the Shanghai-Nanking line. Among the railways projected is a line which will link Nanking with the Canton-Hankow Railway at a point below Changsha, by way of Nanchang. These lines, with the road projected from Sinyang in Honan Province, through Anhwei, would revolutionize the commercial conditions of the port, especially if the through connection between Pukow and Chengtu, in Szechuan, is ultimately made.

The Shanghai-Nanking Railway terminates at Hsiakwan—with a spur running to the river—the suburb which lies between the walled city and the river, where there is a pontoon. A second pontoon serves the travellers bound to or from Nanking for a ferry line which carries through passengers across the river to the Pukow terminus of the railway to Tientsin and Pukow. Passengers for Nanking who arrive by the Shanghai-Nanking Railway or by vessel disembark at Hsiakwan, with which place Nanking is connected by the Nanking City Railway, 8 miles in length, with hourly train service.

The city is surrounded by high walls over a circuit of 32 miles, but much of the land within is waste or given over to cultivation. The population of Nanking and the town outside its walls has been estimated at 300,000, but this is probably exaggerated. The foreign population consists of 150 Americans, 50 British, 20 others of European nationalities, and 150 Japanese; most of the Europeans are teachers or missionaries. The city and the suburb of Hsiakwan are lighted by electricity. Filtered river water provides the households.

It remains to be seen whether Nanking will become the centre of the trade which now passes through Pukow *en route* to Shanghai, and of the mineral trade which will come with the building of the projected lines. For the present goods for Shanghai by the existing railway are financed by Shanghai, and Nanking handles only a small part of the trade. The trade of Nanking proper is nearly all local in nature, for it is handicapped by the competition of Chinkiang with its situation on the Grand Canal and the connecting system of waterways in North and South Kiangsu, and of Wuhu by its established trade through being a centre of production and transhipment of rice, a staple trade that provides a constant inflow of silver. The wealthy districts in Honan and Anhwei are not greater in distance from Nanking than from Hankow, and as Nanking is nearer to the sea and is accessible at all times of the year to deep-draft ocean-going vessels, which Hankow is far from being, the construction of the proposed railways may make of Nanking (or of Pukow) the greatest of the river ports in the years to come.

COMMERCE AND INDUSTRY.—The imports of foreign goods into the port in 1917 totalled Tls. 11,746,238 and of native goods Tls. 3,708,181, the combined amount being Tls. 14,994,539. This compares with Tls. 5,545,995 in 1913, Tls. 11,325,366 in 1914, and with Tls. 14,539,495 and Tls. 14,614,851 in 1915 and 1916 respectively. These figures show the remarkable growth of the trade of the port over pre-war days, when six million taels was the record figure, and also indicate the persistence of foreign trade under the adverse conditions of the past four years.

The chief imports are cotton and woollen piece goods, cigarettes, kerosene, sugar and seaweed.

Exports through the Maritime Customs in 1917 were but Tls. 7,440,603. However, it must be borne in mind that in addition to the goods in foreign bottoms reported by the Maritime Customs, the railways carry a large volume of business. In 1917 the principal articles sent outward by rail were rice, beans, ground-



Photo : Ernest Connell

PUKOW—SHOWING THE NORTH END OF THE BUND, A TRAIN FROM THE NORTH THAT HAS BEEN UNLOADED STANDING ON THE SIDING, AND THE NEW GODOWNS IN THE BACKGROUND

nuts, wheat, coal, egg yolk, etc., while the principal imports were rice, sugar, flour, paper, bamboo and timber. The weight of the traffic carried from and to Nanking by the Shanghai-Nanking Railway during the year was as follows:

	Outward piculs	Inward piculs
Agricultural products	6,687,569	875,256
Animal products	308,852	21,918
Mineral products	438,481	138,063
Forest products	38,945	215,970
Manufactures	189,545	799,007
Total	7,663,392	2,150,214

The total value of the rail-borne traffic, inward and outward, is estimated by the Commissioner at Tls. 55,000,000 in the year under review.

Exports are principally beans, fresh eggs, lard, frozen beef and game, rapeseed, untanned goatskins, animal tallow, feathers, peanuts, buffalo and cow hides, sesamum seed, silk piecegoods, weasel skins and native fans and parts.

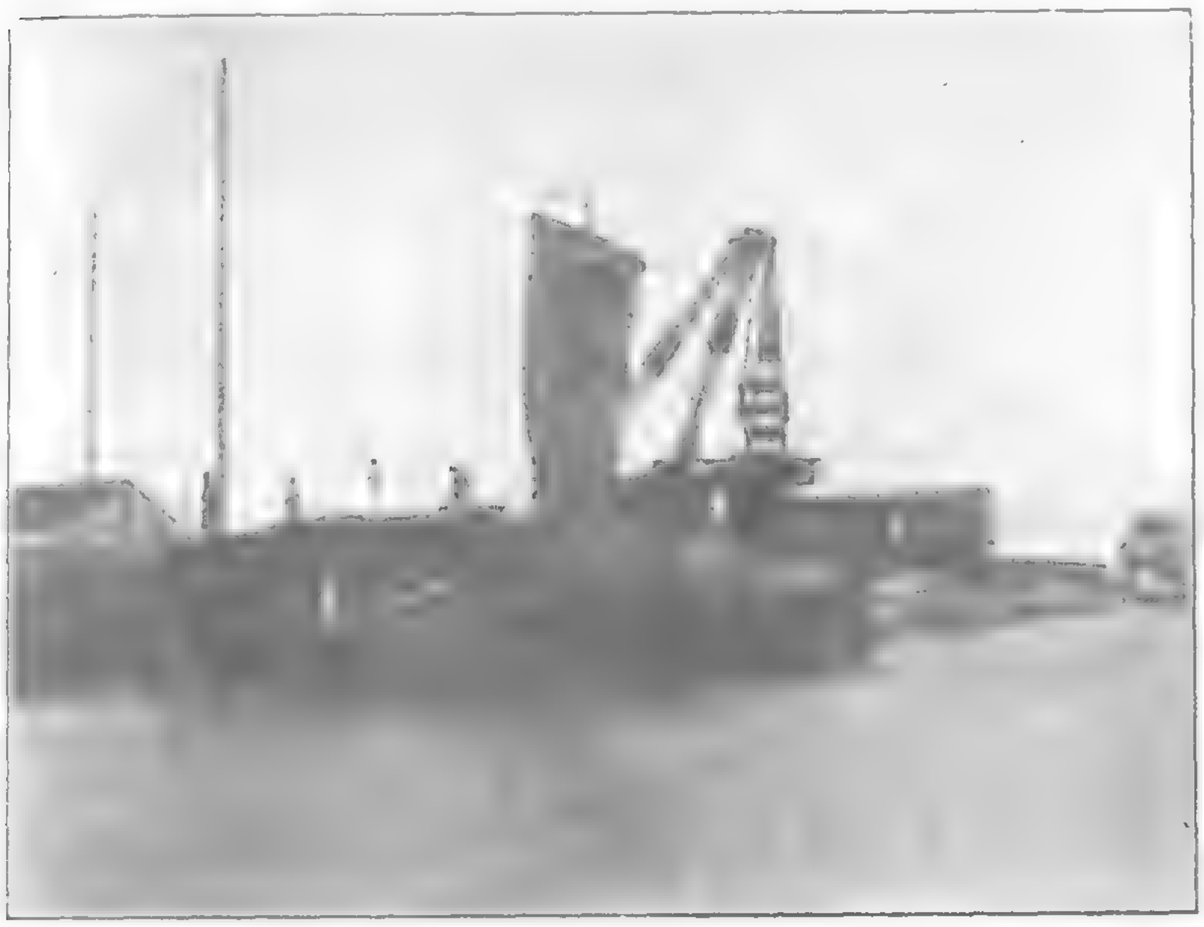


Photo: Ernest Connell

PUKOW—THE WHARF WITH UNLOADING CRANE

The total number of vessels entering and clearing in 1917 was 3,518 with an aggregate capacity of 3,698,712 tons—3,277 steamers and 241 sailing vessels. The gross tonnage exceeded that of 1916 by fully 145,000, and is the largest hitherto recorded.

The International Export Company's plant is erected close to the river where their own vessels load for home ports frozen products of various kinds—meat, game, poultry, etc.—their refrigerating installation at this factory being one of the largest in the world.

Of recent years manufactories using foreign machinery or foreign-style machinery have sprung up in the city and neighborhood. These enterprises include factories for rice cleaning, knitting hosiery, weaving cotton and silk, and for making soap, paper, bamboo ware, etc.

TRANSPORTATION FACILITIES.—In addition to the railways mentioned above, the district about Nanking is amply endowed with waterways. Two great waterways traverse Kiangsu, the Yangtze River in a generally east and west direction and the Grand Canal from north to south. In an area 175 miles by 160 miles comprising parts of the provinces of Chekiang and Kiangsu, there are said to be 25,000 miles of canal. From the mouth of the Yangtze, a short distance below Shanghai, as far inland as Hankow, a distance of approximately 600 miles, navigation is possible by large coasters, and ocean-going vessels can ply as far as Nanking, while smaller steamers can ply regularly to Ichang, 1,000 miles from the sea, and irregularly to Chungking, 1,400 miles from the sea. The Grand Canal in this area, is in a state of neglect, although navigation between the Yangtze and Tsingkiangpu, on the upper section, and in the part south of the Yangtze, is still possible to native craft.

The lines calling at the port regularly are the China Navigation Company; Nisshin Kisen Kaisha; China Merchants' Steam Navigation Co., and the Indo-China Company. Each line furnishes three or four vessels weekly.

PORT FACILITIES.—All steamers load and unload at hulks moored off the Hsiakwan bund, the hulks being connected with the bund by gangways. Old sailing vessels or steamers have been acquired and have been transformed into floating landing places, for passengers and cargo, storehouse for cargo, and offices for the shipping company. They are secured with several anchors to prevent swinging, but with cable length enough to enable them to meet the strain of highest water. Hulks of a similar character are used at all river ports where there is no wharfage accommodation, but during late years some companies have had special modern pontoons built for use at certain ports.

MERCHANTS.—Butterfield & Swire; International Export Co.; Jardine, Matheson & Co.

Pukow

Pukow is the terminal on the south bank of the Yangtze River, opposite Nanking, of the railway which extends south from Tientsin. The port owes its importance to this fact. It will also virtually be the terminal of the railway to be built across to the Peking-Hankow line, and known as the Pukow-Sinyang Railway. Construction on this line, which leaves the Tientsin-Pukow Railway at Wui, about ten miles north of Pukow, was suspended after war broke out, but no doubt it will be resumed as soon as financial adjustments can be made subsequent to the peace conference. It is hoped that this line will be a link in a great railway extending into Szechuan Province, and thus giving Chengtu rail connection with the sea at Shanghai, viâ Pukow, and the railway from Nanking.

Prior to the coming of the railway Pukow foreshore was a swamp, the small walled city being a short distance from the river on rising ground. The advent of the railway has meant the creation of a shipping port. A substantial station has been erected, expansive railway yards and sidings have been installed, godowns have been erected—but even yet insufficient—and above all the river front has been bunded and wharves have been built. Freight trains can now run to the river side and there discharge, and steamers are able to moor at wharves to take on cargo. The time will come when train ferries will transport loaded passenger and freight trains, but shipping will always claim large cargoes. Already large quantities of grain and other products from the interior are shipped through Pukow, and during the shipping shortage which has been obtaining for some time past the railway authorities have been unable to handle or store the great quantity of cargo coming forward for transportation.

On the bank of the river are three piers, each 300 feet in length, two of which are equipped with cranes capable of handling lifts of 25 tons; two hulks; and five warehouses. The depth of water ranges from 50 to 60 feet in summer and not less than 24 feet in winter.

PORT IMPROVEMENTS.—A loan was signed with the Banque Industrielle de Chine on October 9, 1913, for Francs 150,000,000, the proceeds of which were to be devoted to the construction of Pukow port, the construction of tramways in Peking, etc. Several plans for a model city on the site, which is now low and swampy ground, have been drawn up, and it appears that the one submitted by M. Bourgery, Engineer of the Banque Industrielle de Chine, will be adopted. His survey was made in 1914, but the outbreak of the war has interrupted further progress. His plan calls for the building of a city on most modern lines, the main streets radiating from a central point. A sewerage system is included, and breathing spaces in the form of parks are provided. Before any city building can be undertaken the whole of the land will have to be filled in and for this purpose it is probable that mud will be pumped from the Yangtze.

Wuhu

Wuhu, on the south bank of the Yangtze, is the principal port between Chinkiang and Kiukiang and the only treaty port in Anhwei Province. It is a well built city of 130,000 people, and has the appearance of a thriving and busy market. Its water connections with the interior put it in touch with prosperous agricultural districts, such as the silk district of Nanling, 50 miles distant, with which the port is connected by a canal, and Taipinghsien, a tea-producing centre eight miles away with which it has communication through another canal. The important market of

Ningkwofu in Southern Anhwei, distant 50 miles, is also connected with Wuhu by a canal with a depth of five to six feet in winter and from ten to twelve feet in summer. The status of Wuhu as a port of call on the lower Yangtze gives it rapid and easy communication with the coast and the ports of call for ocean-going vessels. It is 256 miles above Shanghai.



WUHU—BEGINNING OF THE NEW SETTLEMENT

A railway is projected to connect with the proposed line from Nanking to Nanchang. In 1906 a railway Company known as the Anhui Railway Co., Ld., was formed by Lord Li Ching-fang to build a line from Wuhu to Kwangtehchow on the Chekiang border, a distance of about 150 miles, but it died after the expenditure of much money.

Wuhu is the shipping point for agricultural products from the territory tapped by its waterways. Its great exports are rice and tea, and foreign shipping firms have godowns and landing facilities for handling the great bulk of the first named article. Butterfield and Swire have erected four large godowns, and Jardine, Matheson & Co., project the erection of others. The commerce of the port is being shifted to the new settlement and the foreign concession, and all the steamship lines plan to shift there from their present location as soon as the Customs House is completed.

A remarkable feature in the financial operations of Anhwei, in which Wuhu is concerned through being a large buying centre, is the continued employment of the old Spanish dollar, sometimes known as the Carolus dollar, which entered China a century or more ago and in some way penetrated to certain districts in Anhwei and met with much favor there—so much so, in fact, that a few communities still cling to the use of this currency and look upon other forms of dollars, such as the Mexican coin or the product of native mints, with suspicion. An authority has said that but four million of the dollars exist in the province, but as at least half of these must be hoarded by the peasantry and the remainder do not furnish a sufficient sum for trading purposes, the Spanish dollar, although intrinsically less valuable than the Mexican dollar, often reaches a local valuation of $1.50 in Mexican currency or even more. As only dollars of certain dates are accepted and there is no possibility of increasing the supply, the limited number of coins in circulation has, in the past, given rise to much gambling in exchange. A gentleman in Wuhu, who has examined many thousands of Carolus dollars, has said that he has never seen coins of an earlier date than 1773 nor later than 1821. Fortunately the use of Chinese and Mexican dollars is becoming more popular.

COMMERCE AND INDUSTRY.—Rice has been in the past the dominant export from Wuhu. In 1911 the Commissioner of Customs wrote that the rice trade overshadowed everything else, and this was true in the days when as many as 30 steamers might have been seen loading the grain for coast and river ports. In 1905 the exports of rice reached the enormous total of 8½ million piculs. The rice trade has decreased in late years; in 1917 but 1.66 million piculs were exported, in spite of an abundant crop and a large amount on hand from the preceding season. Fluctuations are due to the demand in Swatow and Canton as well as the competition of rice from Indo-China; and as since the war the scarcity of vessels proceeding to Europe has turned the crop of Indo-China rice toward China, and the crop in the Southern Provinces has been unusually good during the same period, the demand on Wuhu has been much less than usual.

It is interesting to note that of the rice which left the port by steamship in 1917, Shanghai took 44 per cent., Swatow 39 per cent., Canton 9 per cent., Chefoo 5 per cent., and the balance to Newchwang, Tientsin, Ningpo and Foochow. As the prosperity of the port depends upon rice, the total trade in other commodities has been poor of late years.

In 1917 the total trade of the port was valued at Tls. 19,447,194. Of this Tls. 7,140,638 represents imports of foreign goods and Tls. 4,733,520 represents imports of native goods, while exports amounted to Tls. 7,537,036. The total trade in this period was nearly Tls. 6,000,000 less than in 1916.

Important exports in 1917 were egg albumen, egg yolk, fresh eggs, feathers, hemp fibre, peanuts, hides, rapeseed, sesamum seed, seed-cake, cocoons, untanned goatskins and tea. Part of the exports is accounted for by 85,390 tons of iron ore shipped by the Mitsubishi Kaisha from the Tayeh mines to Moji, by way of Wuhu.

Among imports from foreign sources were cotton goods, woolens, metal such as cobbles and wire shorts, nail rods, nails and rivets, plate cuttings, wire, tin plate—this mostly for the Standard Oil tin-making plant—bags, cigarettes, clocks and watches, dyes, window glass, haberdashery, hosiery, lamps and lampware, matches, medicine, needles, oil, soap, soda ash, sugar, umbrellas.

INDUSTRY.—A Chinese company with a capital of $500,000 is erecting a mill near the Foreign Settlement for the purpose of spinning cotton yarn, the machinery being purchased in England. Other industries are a flour mill, a soap factory, and a brick and tile manufactory.

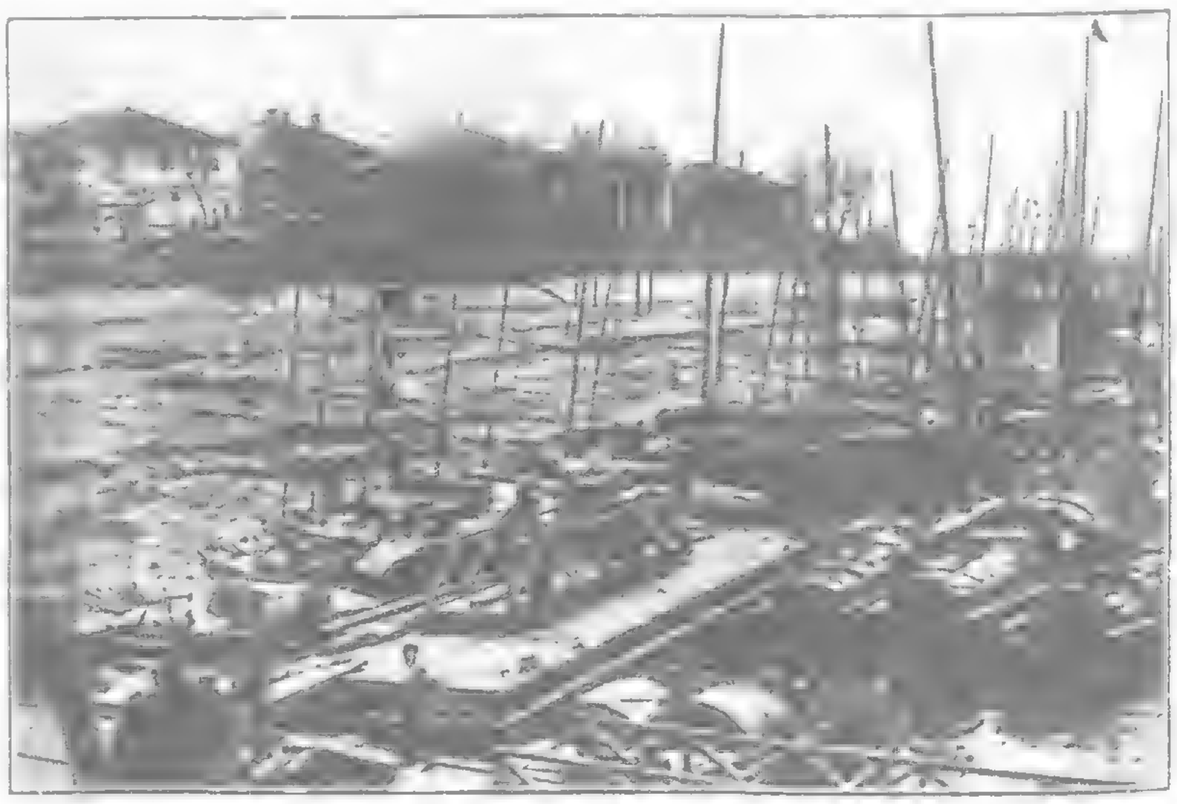
MINING.—The Pao Hsing Mining Company shipped their first consignment of iron ore from Tsaishiki in the autumn of 1917, and other mines are being developed in Anhwei. The two mines nearest Wuhu, Tsaishiki on the one side and Taoching on the other, are expected to produce 80,000 tons a year. As in many other districts in China, deposits of iron, coal and copper are awaiting development. Ample resources of these are within easy distance of Wuhu.

PORT FACILITIES.—The anchorage here is better than at any other port in the lower Yangtze, being protected by the range of hills which is behind the city. Vessels of 18-20 ft. draught can make the port at all times in normal years and load and unload at hulks.

MERCHANTS.—Butterfield and Swire; Jardine, Matheson & Co.

Kiukiang

Kiukiang, in Kiangsi Province, is situated on the south bank of the Yangtze River near the outlet of Poyang Lake, 453 miles above Shanghai and 142 miles below Hankow. It is one of the earlier treaty ports, having been opened to foreign trade in 1862. Kiukiang is one of the three great tea ports, the other two being Hankow and Foochow. Principal exports are tea, beans, peas,



THE BUND, KIUKIANG

hemp, indigo, paper and sesamum seeds. Kiukiang was a city of much importance until the Taiping Rebellion in 1853, when the rebels almost destroyed it while retreating from the Imperial troops. Since the foreign settlement has been established the city has regained some of its commercial importance. The population is estimated at 36,000.

A popular summer resort, Kuling, lies on a hill, about 3,600 feet above water level about 25 miles to the west. Many missionaries and other foreign residents reside there in summer, the annual gatherings averaging over a thousand persons.

Kiukiang is a port of call for all steamers plying on the river at the point where it is located. It is also the terminus of the Nan-Hsun Railway, extending 87 miles to Nanchang, the capital of the province. A proposal was recently made to extend this railway from Nanchang to Foochow and Santuao, in Fukien Province, and negotiations with this in view were understood to be proceeding between the Chinese Ministry of Communications and the representative of certain Japanese banks. Kiangsi and Fukien provincials protested vigorously against the proposition and nothing has been heard of it of late. The railway was built in 1904-1915 by the Chinese of Kiangsi Province with money borrowed from the Taiwan Bank, but it has not been operating profitably owing to incompleteness and bad management. It is also proposed to extend the railway from Nanchang to Shiuchow, Kwangtung Province, to connect with the railway from Canton to Hankow which is now under construction. Communication is also held with Nanchang and other ports on Poyang Lake by steamer and junk, by way of the Yangtze. Lake Poyang, 80 miles in length and 20 miles in width, in size the second lake in China, empties into the Yangtze below Kiukiang. In summer the lake is 12-13 feet deep, but in winter the depth decreases to 3-5 feet and the steamer service ceases. Some 30 ships are in this service. There is a great junk trade on the lake and its tributary streams. The district is netted with water transportation by canal, streams and lakes.

The rivers feeding into the Poyang Lake, principally the Kan and the Fu-ho, tap a region producing a large amount of wood oil. These oils are now mostly carried by coolie over the hills to boats which navigate the West River to Canton and Hongkong. With proper facilities the cargo could be attracted to move via the Poyang Lake and Kiukiang. In the Kan River valley near Kianfu there are extensive deposits of coal which can be had at Mex. 6 per ton ex mine

COMMERCE AND INDUSTRY.—The opening of Kiukiang as a port for foreign trade was due to its location in the centre of a tea-growing district abounding in water transportation. The tea trade was affected by the prohibition of all but British teas from England: by high exchange; by lack of steamer space to America, and by the unsettled condition of affairs in Russia. Another bar against the trade with Russia was the congestion of supplies at Vladivostock and the impossibility of securing freight facilities on the Siberian Railway. As a result tea sales declined sharply in the year, and the Russian factories for the manufacture of brick tea were forced to close. In spite of this fact the trade of the port as a whole was satisfactory.

Imports of foreign goods aggregated Tls. 12,544,067 in 1917. and imports of native goods Tls. 6,120,817. The value of exports in the same period was Tls. 23,271,150.

The export of tea in 1917 is shown in the following table:—

	piculs.	Tls.
Black tea	90,675	5,341,665
Green tea	41,832	2,074,868
Black tea in bricks	35,506	944,271
Green tea in bricks	17,314	215,906
Tablet tea	1,151	35,002
Sundry	28,902	302,217
Total	215,980	8 913,929

Some of the other important exports were as follow:—

	piculs
Beans and peas	417,546
Camphor	2,492
Chinaware	75,803
Raw cotton	46,158
Ramie fibre	164,355
Hides, buffalo and cow	11,751
Indigo	23,159
Sesamum seed	8,627
Vegetable tallow	10,204

Imports from foreign sources included cotton piece goods, woollens, metals and minerals, dyes, glass, matches, needles, oil, sugar, umbrellas.

INDUSTRIES.—Among the industries of Kiukiang may be mentioned:

The Kiukiang Electric Light Co. has been formed with a capital of $40,000 Mexican and an order for American machinery has been placed with a Shanghai firm. It is a Chinese concern.

The Kiukiang-Nanchang Railway operates a workshop here.

Two Russian factories for manufacturing black and green tea bricks and black tea tablets for shipment to Siberia, Russia and Mongolia. The manufacture of tablet tea was started in 1891. It is now made of China tea dust blended with Ceylon and Java tea dust

The Kiukiang Telephone Co. was founded in 1916. It has less than a hundred connections.

The production of liquid indigo is an important industry in the region of Kiukiang. Two crops of the indigo plant are grown each year. The first is planted in December, and a layer of ash or straw is laid over the ground to protect the seeds from cold and birds. In April the young sprouts are transplanted into rows, and fertilized. By June the plants have attained their full growth, when the tops and leaves are cut down, made into bundles, and thrown into wooden vats filled with water. The bundles remain in the vats for a day, after which the plants are bruised and removed. The colored water remaining is allowed to stand over night, and on the following day powdered lime is added and the mixture briskly stirred until sundown. When the mixture has reached the proper consistency the top water is drained off, and from 3 to 4 catties of liquid indigo remain. About 4,200 catties of the plant are required to produce 1 picul of indigo. The second crop, of a different variety, is planted on the same ground. The seeds are not transplanted.

Duff's Dairy Farm, a British concern started some 20 years ago primarily for supplying milk to the summer resort of Kuling. About 50 dairies of Chinese ownership with herds aggregating 600 or more cows supply the firm with milk. Milk is purchased according to its value in butter fat, ascertained by the Babcock test. Two butter making plants are maintained Skimmed milk and buttermilk are usually fed to hogs, and hams and bacon are cured in the concern's Kuling plant. A canning plant is operated in Kiukiang.

Kiukiang is famous as the market for Kingtehchen* pottery, though the product is also known as Kiukiang pottery. About 160 ovens operate at Kingtehchen, which is situated on the Changkiang river flowing into the Poyang Lake.

TRANSPORTATION FACILITIES.—Mention of the railway and water transportation is made above. In 1917 steamers entered and cleared numbered 2,279 of 3,500,809 tons. Junk clearances in the same year totalled 625,429 tons, of which 114,581 tons represent clearances for Poyang Lake ports. Lighters and cargo boats of foreign style made 676 clearances, totalling 40,000 tons, for lake ports.

PORT FACILITIES.—Vessels discharge into and load from privately-owned hulks in the stream.

MERCHANTS.—Butterfield and Swire; J. L. Duff & Co.; Jardine, Matheson & Co.; S. W. Litvinoff & Co.; Molchanoff, Pechatnoff & Co.

Changsha

Changsha, the capital of the province of Hunan, is situated on the right bank of the Siang Kiang. It was opened as a treaty port in 1904, and has a population estimated at 500,000. The city is noted for its progressiveness, an indication of which is displayed in its clean streets and general orderliness.

Changsha holds excellent water connection with the Yangtze River through the Siang Kiang and Tungting Lake. In addition it is on the main line of the projected Hankow-Canton Railway, which is now in operation from Wuchang (the port on the Yangtze Kiang opposite Hankow) to Chuchow, 38 miles below Changsha At Chuchow the main line of the Hankow-Canton Railway is joined by a colliery railway which runs to Pinghsiang, 75 miles in the interior.

From the middle of February to the end of November the steamers designed for travel on the Upper Yangtze, drawing up to 8 feet, have no difficulty in maintaining communication with

* See FAR EASTERN REVIEW, April, 1918, for description of Kingtehchen Porcelain Industry.

the port. During the summer months coasters and steamers from the Lower Yangtze may ply safely. It is during the winter months that low water over certain crossings interferes with trade.

COMMERCE AND INDUSTRY.—The mineral wealth of Hunan is as varied as it is great, and great wealth in minerals finds an outlet through Changsha and thence through Hankow to the outer world. Deposits are chiefly of coal, lead, zinc and antimony, but manganese, copper, iron, gold and silver and other minerals are also found. The Pinghsiang coal mines* which are worked systematically, while really in Kiangsi Province, find their outlet through Changsha. The seam now being worked is estimated at 300 million tons, most of which can be taken out by level adits, while a shaft depth of 200 metres will be sufficient to drain the whole field. The coal is taken to Chuchow on the railway mentioned, where it is transhipped into lighters holding 200 to 300 tons and towed by fast and powerful steam vessels to Yangtze markets.

Figures of exports of metal and ores in 1917 are given in the table below. The quantity of antimony† regulus and crude antimony shipped in this period is unprecedented, exports of regulus being more than double that of the preceding year while the export of crude metal shows an excess of 100,000 piculs over 1916. The export of antimony would have been greater, probably, but for certain unfortunate circumstances. In the first instance, the New York market has turned to other sources of supplies; and in the second instance many of the native miners began during the year the adulteration of their product, probably in an effort to recoup their losses due to disastrous speculation in the preceding year. Both conditions affected the market. A table giving the 1917 export of minerals and coal follows:—

	piculs
Antimony, crude	319,993
Antimony, refuse	5,494
Antimony, regulus	222,062
Antimony, ore	1,512
Iron	874
Lead	3,407
Lead ore	233,066
Manganese ore	110,863
Quicksilver	27
Steel bars	1,174
Tin, in slabs	748
Tungsten (Wolfram) ore	3,540
Zinc (spelter)	840
Zinc ore	109
	tons
Coal	307,919
Coke	270,697

Other exports are rice, tea, paper, tea oil (camellia nut oil), tobacco, lacquer, hemp, earthenware, and timber. The total value of exports from Changsha in 1917 was Tls. 15,239,123. Imports of foreign merchandise amounted to Tls. 9,242,404 and of native merchandise Tls. 3,010,701.

The total trade of Changsha has climbed steadily from Tls 9,256,648 in 1908 to Tls. 27,596,811 in 1917, due principally to the development of mines in the neighborhood.

The imports in 1917 consisted largely of piecegoods, forming the most valuable group. Other important imports in the same year were copper ingots and slabs, 4,113 piculs, although this is only a fraction of the trade of former years which reached 50,747 piculs in 1914: bars, nails, rails, sheets and plates; galvanized sheet iron; lead in pigs to the weight of 2,950 piculs; steel; tin in slabs, graphite; asbestos; bags (458,550 pieces): 24,478 gross of buttons; 60,465,000 cigarettes; aniline dyes to the value of Tls 30,169; electrical material to the value of Tls. 63,562; 7,947 boxes of window glass; machinery to the value of 46,700, comparing with Tls. 470,076 in 1914; 48,034,000 needles; 68,428 gallons of engine oil; American kerosene oil, 5,248,500 gallons, a decline from 7,226,434 gallons in 1914; and 955,000 and 1,421,110 gallons of Borneo and Sumatra kerosene, respectively; 182,678 umbrellas; and 25,564 piculs of cement.

In addition to the exports of metals given above, important exports were 3,283 piculs of cotton; 312 piculs of feathers; 2,066 piculs of coir and 2,296 piculs of hemp; 58,623 piculs of fireworks, the trade in which declined from 70,040 piculs in 1914; 1,138 piculs of human hair; 4,828 cow hides; 21,870 piculs of paper; and 1,850 piculs of black tea.

Entrances and clearances of steamships in 1917 totalled 2,889 with a tonnage of 483,504. In the same period entrances and clearances of Chinese sailing ships totalled 443 with a tonnage of 13,031.

THE PINGHSIANG COLLIERY.—The coalfields now being worked are actually at Anyuanshan, five miles from Pinghsiang The Pinghsiang mine is one of the three large collieries of China, the other two being the Kailan Mine in Chihli Province and the Poshan Mine in Shantung Province. The Pingshiang Colliery is a branch of the Han Yeh Ping Iron and Coal Company

The coal deposits of Anyuanshan extend for 7 miles with a width of 3 miles. The vein, however, extends 60 miles in a northeasterly direction, and the total deposit is expected to last for 500 years, placing the annual output at a million tons. Part of the output is converted into coke in 6 European kilns, each containing 254 chambers, capable of holding at one time 4 tons of coal; and Chinese kilns of a rude kind are called into use when there is a sudden demand for the product. The mine is administered by a Chinese director and assistants, while technical affairs are in the hands of foreigners. Five thousand miners and 4,000 workmen are employed in the operations.

MERCHANTS.—Andersen, Meyer & Co., Ltd.; Butterfield & Swire; Jardine, Matheson & Co.

* See FAR EASTERN REVIEW, March, 1916, for full description of Pinghsiang mines.

† See FAR EASTERN REVIEW, April, 1916: Antimony production in China. Also December, 1918.

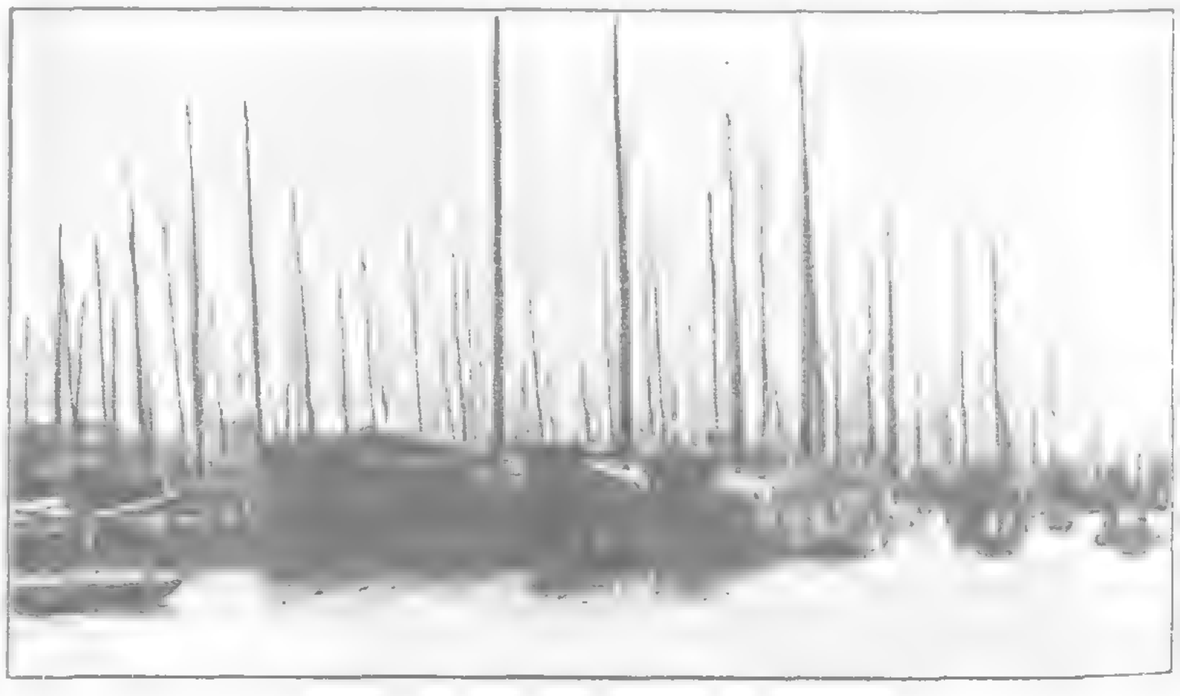
Hankow

Hankow, in Hupeh Province, situated in lat. 30 deg. 35 min. N., long. 114 deg. 17 min. E., is at the confluence of the great Yangtze and Han Rivers; across the Han is Hanyang, where there are extensive iron and steel works; and opposite both, across the Yangtze, is Wuchang, the capital of the Province. The combined population of the triple mart is estimated at 1,321,200 Chinese, and in Hankow there are some 2,000 foreigners.

Hankow was an important commercial centre before the foreign trader put in an appearance. It was further developed when it constituted the head of steam navigation by ocean-going vessels, met with still greater prosperity with the opening of the Upper Yangtze to steamers, and its position as the great railroad centre of China will still increase its importance.

A glance at the map of China will convince any observer of the natural trade advantages of Hankow. The rivers on which it is situated, with their tributaries, drain the entire western area of China south of Mongolia. These natural carriers are being supplemented by artificial ones in the shape of railways intended to radiate in every direction, for it is the hope of every proposed line in Central China to make the "Wu Han Cities" (Hankow, Wuchang and Hanyang) a common terminus. Hankow is located midway between the sea and the rich province of Szechuan, and being at the head of navigation for ocean-going steamers must always maintain its standing as a place of transhipment for the raw products of the great territory it commands. Hankow collects and conditions the raw products of Szechuan, Kweichow, Hunan, Southern Honan, Shensi, Kansu, Hupeh and Western Kiangsi, for export to foreign ports.

When Hankow was opened as a treaty port in 1861 an area of 62 acres on the waterfront was granted to the British Government for a concession and in 1896 this was extended by an additional grant of 53 acres. Next below the British concession is that



JUNKS ON THE HAN RIVER AT HANKOW

of the Russian Government. After this comes the French concession, and then in turn the ex-German and Japanese concessions. Including the Peking-Hankow Railway reservation, still further downstream, there is, starting from the Chinese business quarter, a frontage of 6,000 yards under foreign control. All the foreign concessions are electrically lighted, well laid out, and well cared for.

The native city was fired by the Imperialist Army in the revolution of 1911. At the end of 1914 it was estimated that fully 80 per cent. of the burnt area had been reconstructed, unfortunately on old Chinese lines. A scheme for the development of a Greater Hankow has been started.*

Hankow has a warm climate, being situated in about the same latitude as Alexandria, in Egypt, and New Orleans, in the United States. It has warm winters and very hot summers, with some extreme changes in May, June, July and December, owing to its great distance from the equalizing influence of the sea. February and March are generally either foggy or rainy; October and November are the best months, for their dry weather. The port possesses a modern water system.



PLAN OF HANKOW HARBOR

COMMERCE AND INDUSTRY.—The industries of Hankow have earned for it the title of "the Chicago of China." Among the many industries in the "Wu-Han Cities" may be mentioned the huge works of the Hanyang Iron and Steel Works at Hankow, the largest Chinese undertaking in the country, employing a staff of 276 (of whom four are foreigners), 2,000 workmen and 2,500 laborers. Its output in 1916 was 9,535 tons of rail steel and 33,568 tons of mild steel. In 1917 the output was 118,932 tons of Martin iron, 31,655 tons of foundry iron, 20,093 tons of rail steel and 30,839 tons of mild steel. Affiliated with the Hanyang Iron and Steel Works, under the ownership of the Han-Yeh-Ping Iron and Coal Co., are the Pinghsiang Colliery (mentioned in the description of Changsha) and the Tayeh Mines, producing iron ore, limestone and dolomite, both of which are in the region of Hankow. The Hankow district offers many facilities in the shape of cheap labor, abundant water and rail transportation, and a great variety of raw products.

Other industries are a paper mill, owned by the Government, a cotton mill at Wuchang, six Russian owned factories in Hankow for the production of brick tea for the Russian trade, four antimony smelters, two brick and tile works, a candle factory, a cement works, a cigarette factory, a distillery, several factories for the dessication and packing of eggs, flour mills, hydraulic pressing companies, ice works, oil mills, silk filature, besides numerous native industries using primitive methods. Three foreign oil companies have tanks and tinning plants in Hankow.

An important industry was founded in 1909 by an English company in a refrigerating and packing plant for the export of frozen pork, eggs, poultry, game and other foodstuffs. At suitable seasons this company runs its own steamers to Hankow to carry away in cold storage the products of its Hankow factory. In 1916

* See FAR EASTERN REVIEW, October 1914, for details.

the value of such products exported was Gold $1,469,531, of which amount eggs accounted for Gold $1,074,669.

In spite of various adverse elements to prosperous trade, such as the continuance of the war in Europe and its further restrictions on shipping, the entrance of the United States into the conflict, the British embargo against non-British teas, which seriously affected the Hankow tea trade, the summer drought followed by autumn floods in the valley of the Yangtze, and the gave political condition of the country, the trade of Hankow in 1917 was distinctly satisfactory. The tea trade was particularly affected, not only by the circumstance mentioned but by the fact that exports to America were practically prohibited by high exchange and lack of steamer space and exports to Russia were seriously decreased by the



CARGO JUNKS AT HANKOW

disturbed state of affairs there. However, as nearly all tea purchases are made by Shanghai money, and the Hankow dealers hand the remittances on to Chinese cities far inland, some of them outside the province, the loss to Hankow has been only the brokerage on tea shipments; and this has been more than offset by the prosperous condition of other trades.

In 1917 foreign imports into Hankow totalled Tls. 57,193,304, of which goods to the value of 9,882,744 were re-exported to Chinese ports, making the consumption of foreign goods in Hankow Tls 47,310,560. Chinese produce imported amounted to Tls. 40,040,956, of which goods to the value of 18,244,739 were re-exported, making the local consumption total Tls. 21,796,217. The exports of Chinese produce of local origin amounted to Tls. 101,623,290. The following table gives the principal exports during the year:—

Description.		Quantity.	Value in Taels.
Piecegoods		—	3,297,437
ORES AND METALS.			
Crude antimony	piculs	266.407	1,984,078
Antimony regulus	,,	135.719	2,124,358
Antimony ore	,,	169	1,292
Brass and copper ingots	,,	8,733	152,461
Iron and mild steel, angles, bars, shapes, etc.	,,	531.393	1,821,331
Pig iron	,,	1,879,939	3,090,995
Iron ore	,,	5,413,811	1,136,900
Pig lead	,,	10,042	190,927
Lead ore	,,	48,763	167,161
Manganese ore	,,	168,370	67,250
Quicksilver	,,	3,300	609.919
Steel	,,	425	4,010
Steel manufactures	,,	162	10.154
Tin	,,	2,192	65,529
Tungsten ore (wolfram)	,,	1,025	59,283
Zinc spelter	,,	3,300	63,900
SUNDRIES.			
Alum, green	,,	32,023	19,202
Alum, white	,,	282	1,091
Arms and munitions		—	69,582
Arsenic	,,	14.923	138.092
Asbestos		—	6,641
Bacon	,,	43,482	584,732
Beancake	,,	1,375.144	1,993.959
Beans	,,	1,843.198	3,170.373
Bones	,,	56,714	70.003
Bran	,,	133.415	150.792
Brick and tiles	pieces	573.780	25,935
Bristles	piculs	19,863	1,541,935
Camphor	,,	107	4,109
Cantharides	,,	49	2.614
Cassia twigs	,,	1.341	5.860
Cement	,,	72,433	58,054

Description.		Quantity	Value in Taels.
SUNDRIES.			
Coal	tons	45,724	421,467
Coir, raw	piculs	3,141	15,368
Coke	tons	654	6,323
Raw cotton	piculs	821,157	19,640.033
Cotton gins		-	10.288
Cuttle-fish	,,	449	7,795
Dates, red	,,	66,847	395,066
Egg albumen, dried	,,	22.721	1.933.784
Egg melange	,,	16.684	564.798
Egg yolk, dried	,,	[illegible]	2,069.016
Egg yolk, liquid	,,	35.325	451,454
Eggs, fresh	pieces	32,143,950	152,708
Feathers	piculs	2.888	42.667
Fibres, coir, hemp, jute, ramie	,,	225.357	2,749.292
Firecrackers and fireworks	,,	2,963	23.432
Frozen products:			
Beef	,,	59.800	376,658
Eggs	,,	13.657	131,175
Lard	,,	1.080	15.867
Porkers	,,	10.059	92.571
Porkers, part of	,,	1,456	8.921
Poultry: chickens	pieces	1,032.912	155.891
Unclassed			1.203
Groundnut (peanut) cake	piculs	11.652	10.254
Groundnuts (peanuts)	,,	3.998	10.035
Groundnut (peanut) kernels	,,	108.921	492,094
Gypsum	,,	454,064	208.809
Hair, human		2.462	59.037
Hides, ass		859	35.455
Hides, buffalo	,,	31.727	644.613
Hides, cow	,,	206,054	8,738.568
Hides, cow, cuttings		221	2,873
Hides, horse	,,	396	11,661
Intestines, pigs'	,,	1,048	48.614
Lard		[illegible]	280.893
Liquorice	,,	1,333	20.330
Musk	taels	1.165	31.737
Nutgalls	piculs	42.023	892.973
Oil, bean	,,	26,106	212.764
Oil, castor	,,	45	1.272
Oil, cottonseed		[illegible]	117.003
Oil, groundnut (peanut)		[illegible]	2.152
Oil, rapeseed		[illegible]	4.168
Oil, sesamum seed		[illegible]	125.278
Oil, tea		[illegible]	43.369
Oil, wood		[illegible]	7.660.504
Paper		[illegible]	667.435
Peas	,,	261.219	521,085
Peppermint leaf	,,	796	3.725
Sea shells (clam shells)		48.029	57.676
Seed, apricot		1.694	14.450
Seed, cotton		70.701	79.892
Seed, rape		3.016	8.012
Seed, sesamum		329.973	1.600.369
Seed cake, cotton		71.527	96.920
Seed cake, rape		107.669	111.926
Seed cake, sesamum		1.937	2.400
Silk, raw and manufactured		13.307	2.820.870
Silk waste		3.207	108.293
Silk cocoons, refuse		13.033	334.441
Sinews		240	5.292
Skins (fur), dog		2.272	1.233
Skins, ass, cuttings		91	1.503
Skins (fur):			
Badger	pieces	9,755	4.409
Cat		59.239	12.411
Civet cat		20.710	12.261
Doe		287.954	102.123
Fox		532	1.129
Goat		2.922.489	2.477.990
Hare and rabbit		805.789	47.058
Lamb		80.364	90.811
Land otter		5.142	16.133
Leopard		837	7.753
Marmot		30.946	7.031
Raccoon		90.552	49.237
Sheep		28.517	16.522
Tiger		[illegible]	1.039
Weasel, with tails		[illegible]	4.177
Weasel, without tails		[illegible]	21.893
Unclassed		11.163	1.753
Skins, pig	piculs	[illegible]	3.356
Soda (potash)		10.556	70.461
Sulphur		[illegible]	2.480
Tallow, animal		55.484	724.452
Tallow, vegetable		211.912	2.846.637
Tea		773.753	14.288.047
Turmeric		70.951	1.801.143
Varnish		16.199	877.067
Walnuts		443	1.265
Walnut kernels		21.056	140.733
Wax, vegetable		310	3.510

Description.	Quantity.	Value in Taels.
SUNDRIES.		
Wax, white ... ... piculs	972	59,216
Wax, yellow ... ... ,,	1,926	73,120
Wool ... ... ,,	17,427	270,921

TRANSPORTATION FACILITIES.—The steamer lines calling here are: Indo-China S. N. Co., Ltd., China Navigation Co., Ltd. These British lines have services throughout the Yangtze river and all China coast ports, with their own respective steamers and agencies. Other river lines: Nisshin Kisen Kaisha (Japanese), China Merchants Co. (Chinese).



THE BRITISH CONCESSION, HANKOW

Hankow is destined to become the railroad centre of China. It is now on the main line of the railway connecting Shanghai and Peking, which railway in turn connects with the northern Chinese railways and the Trans-Siberian line. Another line is being built between Canton and Hankow, construction going on from either end. The northern portion now reaches from Hankow to a point a few miles below Changsha. Other lines are projected in several directions.

A branch line runs from the Peking-Hankow Railway's main line in Hankow to the heart of the British Concession, and another branch leads into the German Concession, thus enabling merchants to have produce transported from the interior to their very doors.

Junks numbering about 25,000 are engaged in the traffic between Hankow, Wuchang and Hanyang and the rich country on the waterways radiating from these ports. An immense number of junks are always moored at the mouth of the Han, extending about five miles along both banks.

HARBOR FACILITIES.—The regular river steamers have their own pontoons or hulks. A. Holt & Co. have a pontoon capable of accommodating their large ocean ships; this berth, in the British Concession, is very handy and is sometimes used by vessels of other companies. Terms will be given on application to the Company. Usually ocean-going vessels lie in the stream. In the winter the water in the river channels east of Hankow is often under 10 feet and it is impossible for any but river steamers to reach the port. In the summer the river is up to 40 or 45 feet and on the average there is water sufficient for ocean-going ships of any size to reach Hankow between the end of April and the end of October.

PILOTAGE.—Pilotage is not compulsory.

PORT CHARGES.—Tonnage or wharf dues, 4 Haikwan mace per ton. Customs, import and export duty various rates but maximum 5 per cent. Light dues, included in tonnage dues. Other charges, British municipality fees, Tls. 50 per vessel using berth alongside British bund.

Stevedoring.—Rates for loading and discharging cargo, about 6 cands. per ton. Lighterage, cost per ton, 40 cands. Lighterage, cost per lighter per day, Tls. 30 (400-ton boat).

MERCHANTS.—Andersen, Meyer & Co., Ltd.; Robt. Anderson & Co., Ltd.; Arnhold, Brothers & Co., Ltd.; The Barkley Co.; Blaire & Co.; Chinese-American Co.; Dodwell & Co., Ltd.; The Robert Dollar Co.; Evans, Pugh & Co.; Geddes & Co.; Jardine, Matheson & Co., Ltd.; Mackenzie & Co., Ltd.; Mitsubishi Co.; Mitsui Bussan Kaisha; Mustard & Co.; Olivier & Co.; Racine, Ackermann & Co.; Ramsay & Co.; Reiss & Co.; Westphal, King and Ramsay, Ltd.

Yochow

Yochow, in Hunan Province, is a port on the Yangtze. It is situated in lat. 29 deg. 23 min. N., long 113 deg. 8 min. E., at the outlet of Tungting Lake, outside the main course of the river. It is 707 miles distant from Shanghai. Yochow is situated on a high bluff, and as the river below does not offer good anchorage vessels lie at Chenling, 7 miles to the north, where the anchorage is excellent. The town, which was opened to foreign trade in 1898, has little local trade and only a small population (20,000). It is important only as the gateway to the Province, and through it passes practically the whole commerce of Hunan. This trade adds little to the prosperity of the place—the city is the gateway to Hunan and nothing more.

A station on the Hankow-Canton Railway is about 2½ miles distant from Yochow, on the portion of the line which is now being built from Wuchang which will eventually meet the part under construction out of Canton. For the present the service on the line is not well organized, and the portion already constructed is not of such length or importance as to affect the trade of Yochow.

The province of Hunan used to be to foreign commerce what Tibet has been to the explorer—a Forbidden Land—and it is only a few years ago that foreigners were stoned out of Yochow. In 1904, the people were described as showing a "friendly attitude" to all foreigners, which attitude is now well maintained. The anti-foot-binding crusade has done well in Hunan, which was once the most anti-foreign province in all China. They are intensely patriotic, but their patriotism is rather for Hunan than for the Empire at large.

The province is rich in many forms of wealth, though the inhabitants say it consists of "three parts mountain, six water, and one arable soil." One of the many staples is rice, of which nearly a million piculs are sent out of the province to Hupeh and Kueichow in an average year. The Hunan tea sent to Hankow amounts to about six hundred thousand half-chests a year. The timber passing down past Changteh is valued officially at six million taels a year, and is probably worth more. It is largely soft wood—merely poles. In the opinion of old residents the volume seems to be decreasing, as the rafts are, generally speaking, of smaller dimensions than in former years. This is only natural when the constant drain and the existing disregard of the rules of forestation in China are considered.

There is also a large production of cotton. The mountain districts contain large fields of coal, both anthracite and bituminous; iron also is known to exist. Sulphur, antimony, nickel, and other minerals are even now exported, and great possibilities of development are undoubtedly to be found. Tungsten ore has lately been added to the list of exports.

Transportation by steam launches and tows, including 6 large steel lighters of foreign ownership, conducts much of the trade of the port, and in addition it is well served by the Yangtze river steamships. Steamers entered and cleared in 1917 numbered 6,696 with a tonnage of 1,750,003.

TRADE AND INDUSTRY.—Some of the products passing through Yochow for transhipment to coast ports and thence abroad are: quicksilver, antimony, hemp, hides, skins, vegetable tallow, wood oil and varnish. Exports in 1917 amounted to Tls. 2,222,702; imports of foreign goods amounted to Tls. 2,745,288 and of native goods Tls. 2,506,539.

Exports of quicksilver in 1917 totalled 2,498 piculs. Crude antimony in the same period amounted to 773 piculs, antimony refuse to 2,016 piculs, and antimony regulus to 1,764 piculs. Exports of hides amounted to 13,127 piculs.

Shasi

Shasi, in Hupeh Province, is on the north (or left) bank of the Yangtze River, in lat. 30 deg. 15 min. 5 sec. N., lat. 112 deg. 14 min. 41 sec. E., 881 miles above Shanghai and 293 miles above Hankow. The important market city of Kingchow, with a



A VIEW OF SHASI

population of 300,000, is about two miles distant, and the two cities form practically one market. The population of Shasi is 80,000. The port was opened to foreign trade in October, 1896, by a treaty with Japan made in the preceding year.

Shasi became of importance commercially at the time of the Taiping Rebellion in 1853, when junk traffic from the Upper Yangtze terminated there because of the disorganization and danger in the waters and country below. Shasi is now important as a place of transhipment of Chinese produce, being on the line of communication between Szechuan Province and the other sources of raw material on the Upper Yangtze, on the one hand. and Hankow, 293 miles below. The neighboring city of Kingchow was looked upon, in the days of the Manchus, as a position of great strategic strength and for this reason a strong garrison was maintained there until the founding of the Republic. The city is the ancient national highway which leads from Siangyang, in Honan, into the provinces of Kweichow and Yunnan. It enjoys communication with the towns on the shores of Lake Tungting by means of the Taiping Canal.

Shasi will be the northern terminus of the Pauling railway now under contract, which will proceed in a southwesterly direction across the provinces of Human and Kweichow, linking up with the Banque Industrielle de Chine's line (from Yamchow to Chungking through Yunnan), also under contract, at Shingyifu, in Kweichow.

COMMERCE AND INDUSTRY.—The volume of trade in Shasi has declined with the opening of the Yangtze to steam navigation in the upper reaches, Ichang having taken much of its former commerce. In 1917 there was a further decrease, foreign imports during that vear amounting to but Tls. 2,404,656 and Chinese imports to Tls. 476.785. Exports were Tls. 1,541,408. Imports are made largely through Hankow. Exports consist principally of nankeens, brass ingots, raw cotton, rapeseed, rapeseed cake, and vegetable tallow.

The native industries of Shasi are confined mostly to the weaving of cotton, and silks, with a small section engaged in making pewter ware and furniture—particularly a gaudy style of carved bedstead. On account of its weaving industry Shasi is facetiously called the "Manchester of China." A strong cloth is woven which is in great demand throughout the country, particularly the west and south of China. It is produced in great quantities, and is mostly carried by coolies—up to 220-lbs. in a pack—into the south-western provinces, on steamers and junks into Szechuan, on steamers down the Yangtze, and on junks along the canals connecting Shasi with the immediate hinterland.

MINING.—Little is known of the mineral wealth of the surrounding country. Gold mining at points thirty miles above and forty miles below Shasi has been carried on for centuries, in the form of washing, and provides a scanty existence for thousands during the winter months. The dust is distributed evenly through the sand in exposed flats, and can only be obtained by patient labor; a return of 20 cents a day is considered a fair remuneration by the average laborer. Cinnabar and mercury are exported through Shasi. but these originate in Kweichow.

TRANSPORTATION FACILITIES.—Shasi enjoys the frequent service of the Yangtze. Steamers entered and cleared in 1917 numbered 1,036 with a total tonnage of 786,574.

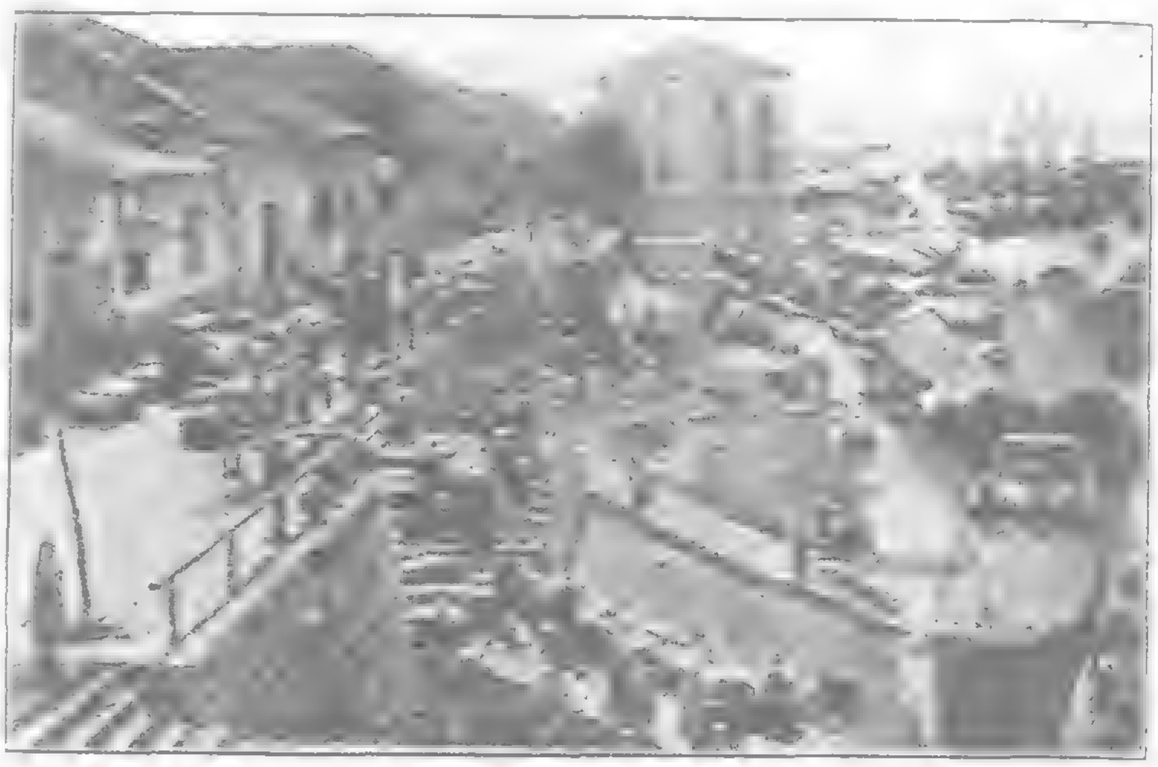
Ichang

Ichang, in Hupeh Province, is situated on the north bank of the Yangtze River in lat. 30 deg. 44 min. N., long. 111 deg. 12 min. E., about 393 miles above Hankow and some ten miles below the entrance to the great Ichang Gorge, or just about a thousand miles from the coast.

Ichang became of importance with the opening of the Upper Yangtze to steam navigation; its position now is chiefly that of an emporium for goods in transit to and from Chungking, now the head of steam navigation for the light-draft vessels plying from Ichang. Very little is produced locally.

The native population is estimated at 40,000.

A railway is projected to Chungking and thence to Chengtu, which would leave the valley of the Yangtze shortly beyond Ichang and re-enter a few miles below Chungking, taking this course principally for engineering reasons, and would open up the mining and agricultural country in between and distant from the Yangtze. Construction of the line out of Ichang was actually started in 1909, and in December, 1910, work was under way for



THE BUND AT ICHANG

a distance of 80 miles from Ichang. Eight miles of line had been laid and construction trains were running for this distance, while the embankment and bridges for a further 25 miles had been finished, when work on this provincial line was stopped in 1911, on the nationalization of the railways of China. With the arrangement of the loan for the construction of what is known as the Hukuang railways—from Hankow to Chengtu, viâ Ichang, and from Hankow to Canton—the provincial railway was taken over from the Szechuan Company and embodied in the Hukuang system, the section from Ichang to Wanhsien being allotted to America. Construction work stopped originally with the revolution, and before the American engineers could begin building operations the Great War broke out and brought about complete cessation of surveys, which were being made at the outset. The discovery of a new route* into Szechuan, viâ the Han River valley, may cause a revision of ideas with regard to the building of the Yangtze Gorge project.

A railway to Chungking would result in bringing cargoes from that port to Ichang in about 18 hours instead of the slower journey through the gorges and rapids now only to be undertaken with risk by junks and light-draft vessels of small tonnage.

COMMERCE AND INDUSTRY.—Imports of foreign goods in 1917 amounted to Tls. 2,157,539 and of Chinese goods Tls. 3,283,284. Of the latter amount, goods to the value of Tls. 1,905,311 were re-exported. Chinese produce of local origin exported in the same period amounted to Tls. 2,150,257. The principal exports were beans, rice, wheat, raw cotton, hides, lard, rapeseed;

Imports from foreign sources comprised cotton goods, metals and minerals, bags and mats, cigarettes, clocks and watches, dyes, glassware, lamps and lampware, machinery, matches, medicines, needles, kerosene oil, socks, sugar, umbrellas, etc.

Now that Wanhsien, the port between Ichang and Chungking, has been opened to trade and a branch of the Customs established there, much cargo from Chungking is being transhipped at that port instead of at Ichang.

TRANSPORTATION FACILITIES.—Entrances and clearances in 1917 were 4,678 vessels of 631,376 tons, of which 830 vessels of 466,358 tons were steamers. In the same period the native Customs cleared 16,510 native junks of 313,274 tons, 8,778 of which went upriver.

It is estimated that 5,000 junks pass up and down between Ichang and Chungking a year, the journey upstream consuming about thirty days. The motive power is practically that of towage by coolies, great hawsers of plaited bamboo being used.

PORT FACILITIES.—The anchorage is off the left bank, opposite the foreign residences, and is good except in freshets, when the anchors should be sighted every two or three days

MERCHANTS.—Butterfield & Swire; Jardine, Matheson & Co.; Mackenzie & Co.

* See FAR EASTERN REVIEW, July 1918, for illustrated details of survey of route from Singyang to Chengtu.

Wanhsien

The opening of the port of Wanhsien to international trade, as provided for by the British Commercial Treaty of 1902, as a sub-office of the Chungking Maritime Customs took place on the 16th March, 1917. The city, which, next to Chungking, is the most important on the Upper Yangtze, is situated in latitude 30° 48½′ N. and longitude 108° 22′ E., about half way between Ichang and Chungking, the distance to these two ports being 176 and 172 miles respectively. The town, on the left bank of the Yangtze, is built on cliffs which rise abruptly to a height of from 90 to 110 feet above zero water level and is backed by precipitous hills. The city is encircled by a crenellated wall, pierced by six gates, which was built in 1488. A small river called Ch'uch'i separates the city proper from its extensive suburb of Nantsingkai, which extends for over 2 miles along the left bank of the Yangtze and the right bank of the Ch'uch'i, and contains many large, well-stocked wholesale and retail shops, testifying to the prosperity of the port. The population of Wanhsien is said to be about 140,000; but half this estimate would seem to be nearer the truth. Sanitary measures are non-existent; but owing to the steep slope of the streets and their stone pavements the city is fairly clean.

The main industries of the port are cotton weaving, boat building, the manufacture of iron pans and ironware, fire-crackers, and coir rope. Some 3,000 hand-looms are devoted to the weaving of native cloth. A filature in the suburb, with an output of some 35 odd piculs of silk annually, absorbs the cocoons gathered from the neighboring districts. Agriculture in an intensive form is carried on in the surrounding country, the numerous hills being extensively terraced. Rice, indian corn, kaoliang, wheat, broad beans, and rape seed are extensively grown, while the shallow surface soil of the rocky hill slopes is thickly covered with wood-oil trees, bamboo, and various kinds of fruit trees, of which latter the cherry is famous in this district for its delicious flavor. Bituminous coal of an inferior quality is mined in abundance from an extensive coal-field which stretches away to the rear of the city. The mines are worked by primitive native methods, and the coal is sold locally at from $5 to $6 per ton, including delivery. Iron is also extensively mined in the district.

The Customs hulk is anchored in a small bay on the left of the river, and its vicinity is reserved for the anchorage of chartered junks. The site chosen for the Customs House is situated within easy reach of the hulk. The reef which forms the bay is 80 feet above zero water-mark, and when it is submerged during the summer freshets, generally for a period of short duration only, the majority of the boats usually anchored here have to find shelter elsewhere. Between this bay and the small river there are several wide flights of stone steps leading to the main business section of the city—a convenience for the landing and shipping of goods. The small river is not navigable at most seasons—due to the elevation of its bed above that of the Yangtze—and is almost dry in winter, but during the period of high water it affords a good haven for junks. Three reefs in the stream engender a very strong and dangerous current, which in summer proves hazardous to ferries and cargo-boats. Below the Tsaop'anshih Reef, on the right bank and just opposite the Customs hulk, is a body of sheltered water—Ch'ênchiapa—which, owing to its proximity to the city and the nature of the bottom, is suitable as a steamer anchorage.

Communication with the interior is by foot traffic alone, neither pack-animals nor carts being used. The provincial capital may be reached in 14½ days by the Small Northern Road *via* Liangshanhsien, Tachuhsien, Shunkingfu, and Taihochen. This road is not in much favor with merchants and travellers, as it passes through hilly country infested by brigands and is, moreover, in poor repair. It is perhaps still premature to state that, should these difficulties be surmounted, the day will not be far distant when the Chungking-Chengtu overland trade will be diverted to this route Fairly good roads lead from Wanhsien to Ichang, Chungking, Shihnanfu, and other of the principal towns in East Szechwan.

The winter cold is not severe, but in summer the heat is intense. The maximum and minimum temperatures recorded in 1917 were 104° and 46° F. respectively.

The net value of the ports trade coming under the cognizance of the Maritime Customs during the nine and a half months the sub-office has been in existence amounted to Hk. Tls. 1,786,949, of which foreign imports contributed 21.1 per cent.; Chinese imports, 6.3 per cent.; and original exports, 72.6 per cent. These figures may be considered satisfactory when the adverse local conditions which have prevailed throughout the year are taken into consideration. The local junk traffic is very considerable, and, according to information derived from authentic sources, the total value of the annual import and export trade prior to the opening of the port amounted to 10 million taels under normal conditions. Thus the Maritime Customs would appear to have shared only to the extent of 18 per cent. of the whole trade. Although this part of Szechwan is not rich in the more valuable products, such as silk, medicines, wax, etc., it is practically self-supporting in that it produces abundantly every article of daily necessity, with the single exception of raw cotton, and, moreover, exports large quantities to down-river ports in the raw or semi-manufactured state. There are a number of promising local industrial enterprises, such as a silk filature, oil refinery, match factory, etc., with an abundant supply of cheap coal and labor. In the present disturbed conditions it is unreasonable to expect any great expansion in the trade of this port, but with the gradual restoration of order in these parts there can be but little doubt—and the general opinion is optimistic in this respect—as to the future prosperity of the port.

In the 9½ months of 1917 exports of Chinese goods amounted to Hk. Tls. 1,297,629. Wood oil leads the list of exports with 31,180 piculs, valued at Hk. Tls. 314,606, of which 14,881 piculs were shipped through to Hankow by chartered junks and 16,299 piculs to Ichang for transhipment by steamers. There is no record showing when this article first appeared on the market, but for the past 20 years it has been the staple in Wanhsien exports to Hankow for shipment abroad. The quantity that passes through the hands of the local brokers is said to be not less than 300,000 piculs annually in normal times, with prospects of an increase due to the high prices ruling in recent years. Wanhsien monopolises the wood-oil trade in Szechwan, and the quantity exported includes not only the output of this district but also that of other places in the province as far distant as Neikiang and Hochow above Chungking. Wood oil shipped from this port is packed in bamboo baskets, wooden tubs, and wooden casks. The first and second are invariably repacked at Hankow after clarification, while the third goes direct to foreign countries.

Other important exports from this port are buffalo and cow hides, untanned goat skins, silk, nutgalls, yellow paper, wheat, vegetable wax, animal tallow, and rice, arranged in the order of their importance. Hides are better than, and goat skins are inferior to, like cargo from Chungking. Yellow paper is produced in very large quantities from macerated bamboos in the Liangshan, Tachu, and Tienkiang districts. The annual production is said to be between 500,000 and 600,000 piculs, and is shipped, largely by likin junks, to Hupeh and Hunan. On account of the scarcity of skilled workmen, pigs' bristles produced here are sent to Chungking by likin boats to be assorted. Sugar is one of the staple exports from this port, but is generally shipped by likin junk to Shasi or Hankow.

Steam service on the Upper Yangtze has not yet reached a stage where it finds it worth while to reserve space for Wanhsien cargo, which pays only half the Chungking-Ichang rate. Out of 290 steamers entered and cleared during the year, aggregating 71,808 tons, 269 vessels merely passed through the port taking passengers and bunker coal, while the remaining 21 steamers carried 3,150 cases of kerosene oil and 620 packages of general cargo to and from the port.

Since the opening of the port the number of foreign firms has increased from two American and three Japanese to two American, two British, and five Japanese, including the agencies of three shipping firms. The proposed erection of an electric installation to supply the port with current has not been realised, due to lack of funds.

The river rose to the unusual height of 130 feet 2 inches on the 26th July, thereby causing considerable damage to property.

Following the political trouble and fighting in the provincial capital in July, the waterways became very insecure because of the prevalence of armed brigands. In November and December it was almost impossible for a junk to proceed up river from Wanhsien even under strong escort. The arrival overland early in December of the retreating Northern soldiers from Chungking caused considerable uneasiness among the local people during their short occupation of the city, but no material harm was experienced. The local branch of the Bank of China has temporarily closed its doors since December, due to the heavy demands made by the military authorities on their liquid assets.

Chungking

Chungking, in Szechuan Province, lies far inland, on the Yangtze Kiang, 1,400 miles from its mouth and 396 miles beyond Ichang. It is situated in lat. 29 deg. 33 min. 56 sec. N., long. 106 deg. 30 min. E., at the junction of the Kialing River with the Yangtze. Ichang, in Hupeh Province, was formerly the head of Yangtze steam navigation, due to the fact that much of the river between Ichang and Chungking consists of rapids and gorges, its channel in places narrowing to 80 yards and being enclosed in precipitous mountain walls on either side. Beyond Wanhsien no great difficulties exist, and steamship traffic is possible not only to Chungking but far beyond. By a treaty with Japan in 1894 the right of steam navigation to Chungking was secured from China, and in 1898 a voyage was successfully made by a small steamer, which, because of its limited power, had to be tracked up the rapids in the same manner that junks must be handled over the same water. On May 6th, 1900, two light-draft British gunboats, the *Woodcock* and the *Woodlark*, arrived at Chungking from Ichang, having left that port on April 5th. The return journey took but 25 steaming hours. On June 12th the Yangtze Trading Co.'s steamer, the *Pioneer*, commenced her maiden voyage and arrived in Chungking June 20th. Since then the number of steamers in the service has increased, and now regular service is offered by several shipping lines.

For some years the belief was held that a steamer capable of navigating the rapids must be so heavily engined and of such light draft that little cargo could be carried, but the problem has been satisfactorily solved in the steamers now in the trade between Ichang and Chungking. A vessel which went into the trade in 1909 and which made the initial passage from Ichang in 8 days, still makes two trips monthly, with full cargoes and crowded with passengers. The most successful type of vessel is that with the screws working in raised tunnels.

It has been estimated that 11 per cent. of the native junks passing through the gorges meet with accidents, total loss not being rare. The insurance rate for goods carried by junk is 4 per cent., and for goods carried by steamer 1½ per cent. Several steamers of Chinese ownership have been lost in the trade, but an authority on that portion of the Yangtze accounts for this by their inexperienced crews and unskilful operation. The same authority sees no reason why the Upper Yangtze should not be covered by steamship service as regularly as the lower river, with properly trained crews on vessels built for the trade.

The Chinese Board of War recently granted funds and authority for the clearing of the rapids and gorges of the Yangtze, and work was undertaken by a staff of young Chinese engineering students, who worked by promitive methods. Little has been accomplished, however.

[See FAR EASTERN REVIEW, August, 1917: "Taming the Yangtze Dragon."]

Chungking is enclosed in a high wall, and on the left bank of the Kialing River, facing Chungking, is the walled city of Kiangpehting. The population of the two cities is estimated at 517,000. The foreign population is 130. Chunkging is electrically lighted by a native company. The climate is depressing, the summer being hot and damp and the winter raw and chilly. The ordinary rise of the river here is about 75 feet; on August 6th, 1898, it rose 101 feet, due to the restriction of the gorges.

COMMERCE AND INDUSTRY.—Chungking is practically the distributing centre for the whole of Western China. Nearly all the trade of this rich area is handled through the port. Exports consist of hides, feathers, bristles, musk, wool, silk, wax, and herbs for Chinese medicines. Goods go to Ichang and Hankow for transhipment to Shanghai. A large trade in salt is done in the city of Tzeliutsing, the salt being produced from wells there, with the aid of primitive machinery.

The hide trade is of particular importance. In 1917 exports amounted to 1,088,035 goat skins, untanned, and cow and buffalo hides amounted to 43,258 cwt. (32,343 piculs). This is rather more than normal, due to war impetus. Most of the hides exported are conditioned at Hankow. They originate in Tibet and Western Szechuan.

Exports of bristles in the same period amounted to 15,652 cwt. (11,739 piculs). Normally the trade is around 20 000 piculs, but its volume has been affected by the European War. There are a number of establishments in Chungking where bristles are prepared for direct export under foreign supervision. Bristles are one of the few exports that are shipped direct from Chungking to foreign countries.

Principal exports from Chungking in 1917 are shown in the following table:—

Bristles	11,739 pcls.	Nutgalls	12,178 pcls.
Wheat	54,864 ,,	Rhubarb	6,093 ,,
Feathers	1,530 ,,	Raw silk	10,102 ,,
Hemp fibre	41,186 ,,	Cocoons, refuse	13,289 ,,
Fungus	8,033 ,,	Goat skins, untanned	1,083,035 pcs.
Grasscloth	4,696 ,,	Tallow, animal	9,789 pcls.
Hides, buffalo and cow	32,343 ,,	Tallow, vegetable	21,287 ,,
Intestines	2,234 ,,	Tobacco leaf	11,868 ,,
Lily flowers, dried	4,508 ,,	Turmeric	18,498 ,,
Medicines	1,764,111 Tls.	White wax	5,568 ,,
Musk	1,005 cats.	Wool	24,126 ,,

The value of exports in 1917 was Tls. 15,018,525.

Imports of foreign goods amounted to Tls. 9,493,937 and of Chinese goods Tls. 9,080,971, in 1917. The imports included 54,752,533-lbs. of cotton yarn, of which 17,817,200-lbs. came from India, 2,960,133-lbs. came from Japan and 33,975,200-lbs. came from Chinese sources. This yarn is used for weaving cloth in homes. There is a healthy demand for the better sort of foreign piece goods in the province.

The above figures give but a faint idea of the commerce at this port owing to the option which merchants in the provincial trade are allowed of passing their cargoes through the likin stations—



A PART OF CHUNGKING, SZECHUAN

which prepare no statistics—or the Maritime Customs. All that passes the likin stations is lost to record.

TRANSPORTATION FACILITIES.—The total tonnage entered and cleared in 1917 aggregated 111,444 tons, an increase of 4,215 tons as compared with the preceding year.

Two new steamers put on during the year contributed to the increase. One of the new steamers, the *Meitan*, is a steel twin-screw towboat built and engined at the Kiangnan Dock and Engineering Works, Shanghai, for the Standard Oil Co. The other new vessel is the *Anlan*. The Szechuan S.S. Co. maintain a service with the *Shutung* and the *Shuhun*. The former vessel was placed on the run in 1909 and the latter in 1914. The latter has earned handsome profits throughout at least eight months of each year and has thus made possible the payment of a dividend of 30 per cent. annually.

The port of Chungking has no harbor regulations of recent date, no sanitary regulations and no pilotage regulations. The Consular Body decided to undertake the drafting of these regulations.

MERCHANTS.—Arnhold Brothers & Co., Ltd.; Barry & Dodwell, Ltd.; Jardine, Matheson & Co., Ltd.; Mackenzie & Co., Ltd.; Widler & Co.

The Grand Canal

In addition to the navigable rivers, China is well supplied with canals and minor waterways. The deltas of the Yangtze and the Sikiang (West River) are netted with canals but the Grand Canal is the most important artificial waterway in China. The Grand Canal extends from Hangchow, in Chekiang Province, to Tientsin, through the provinces of Chekiang, Kiangsu, Shantung and Chihli. Its length is approximately 850 miles. It enters the Yangtze at Chinkiang and starts again on the northern bank at Kuachou.



TRACKING CARGO JUNKS ON GRAND CANAL

The Grand Canal north of the Yangtze was constructed in the sixth century B.C., while the portion from Hangchow to Chinkiang was not built until the seventh century A.D. Its northern terminus was formerly at the old bed of the Yellow River, at Tsingkiangpu, and in 1280-1283 A.D. the section from this point to Tientsin was dug by order of the Emperor Shitsu.

Like all the other ancient public works in China, the Grand Canal is in a state of neglect. Between Hangchow and Chinkiang the canal is still navigable, except in the case of one portion during the winter months; from Chinkiang to Tsingkiangpu it is available over most of the length; and from Tsingkiangpu to Tientsin it is much used by junks, although in a rather dilapidated state. In fact, it is in use throughout its length, although certain parts are obstructed by rubbish or silting and by shallow water due to broken embankments or other causes; but ingenuity and patience on the part of Chinese boatmen overcome such barriers. Sometimes very shallow water can be escaped by diverting the course of a boat through connecting waterways, or by temporary dams which are erected by boatpeople. Between the southern border of Shantung Province and Tsingkiangpu there are no less than 33 locks, and at the other places along the route there are other ancient works, such as storage basins supplied with gates which are opened in the season of low water, to maintain the navigability of the channel throughout the year.

The present state of repair is due to the effort or lack of effort of the provincial governments along its route. In the section south of the Yangtze there are dredgers for use in keeping the channel clear, and these are used on occasion. A comprehensive scheme for the conservancy of the canal was devised by the South Grand Canal Conservancy Bureau, in 1916, with the result that within the past year or two an American corporation has secured a contract for the restoration of the Shantung-Chihli section of the canal, and the survey is under way, a loan for $250,000 having been signed for the initial expenses. Work will be conducted under the Grand Canal Improvement Board, with Mr. John R. Freeman as consulting engineer, with residence at New York, and Mr. Joseph Ripley as chief engineer to carry out the operations. Mr. Ripley, who is now in Tientsin, has been superintendent of the Sault Ste. Marie canal and locks, and was a member of the engineering commission appointed to devise the plan of the Isthmian Canal.

The craft utilized on the canal in Shantung for transportation



WHERE A BRANCH OF THE GRAND CANAL ENTERS THE YANGTZE RIVER. CONGESTED BOAT TRAFFIC PASSING THROUGH THE WATER GATE AT KIANGYIN

are of 15 varieties. For instance, a boat that loads fish carries nothing else; similarly with coal, etc. There are at present 8,050 boats, with a tonnage of 99,000, plying on the canal. The boats have either sails or are dragged along not by mules but by four, five, or six native coolies, and the loads are enormous.

Some notes on the present state of the Grand Canal near its northern terminus, written a few years ago by the Tientsin Commissioner of Customs, are interesting as giving an idea of the importance of the proposed rehabilitation of the channel:

"The Grand Canal. . . which joins the Pei-ho (North River) at Tientsin. . . is in reality nothing but a continuation of the Wei River, from which it derives practically all its water, traffic, and importance as a trade route. Beyond Lintsing, where it is joined by the Wei River, the Grand Canal is dry and useless which, however, does not affect Tientsin trade to any material extent. The all-important point to be here noted is that the Wei River connects Tientsin in almost a straight line with the heart of Honan province, and with the southeastern boundary of the mineral and coal fields of Shansi. And since it is an axiom that water-borne trade of heavy and bulky goods will always be able to hold its own against railway competition, it would undoubtedly be of great advantage if Tientsin were to turn its serious attention to the most important of its natural inland communications, the more so since there is a gradual deterioration noticeable in the value of the Wei River—Grand Canal—as a trade route. Only 10 years ago boats of 1,200 piculs capacity could make sure of reaching Taokow, a distance of 548 miles from Tientsin, in proper season. At present only boats of 300 to 450 piculs can do so, and then only during four or five months of the year. At other times repeated transhipments must take place; often as many as seven or eight of them between Lintsing and Weihwei, an important town some 30 miles beyond Taokow. Formerly, the fleet of Honan boats were known to make 3,000 trips a year. In 1905 this number dropped to below 2,000, and continued to decrease until, in recent years, the number further dwindled to 1,600-1,700."

Tsingtau

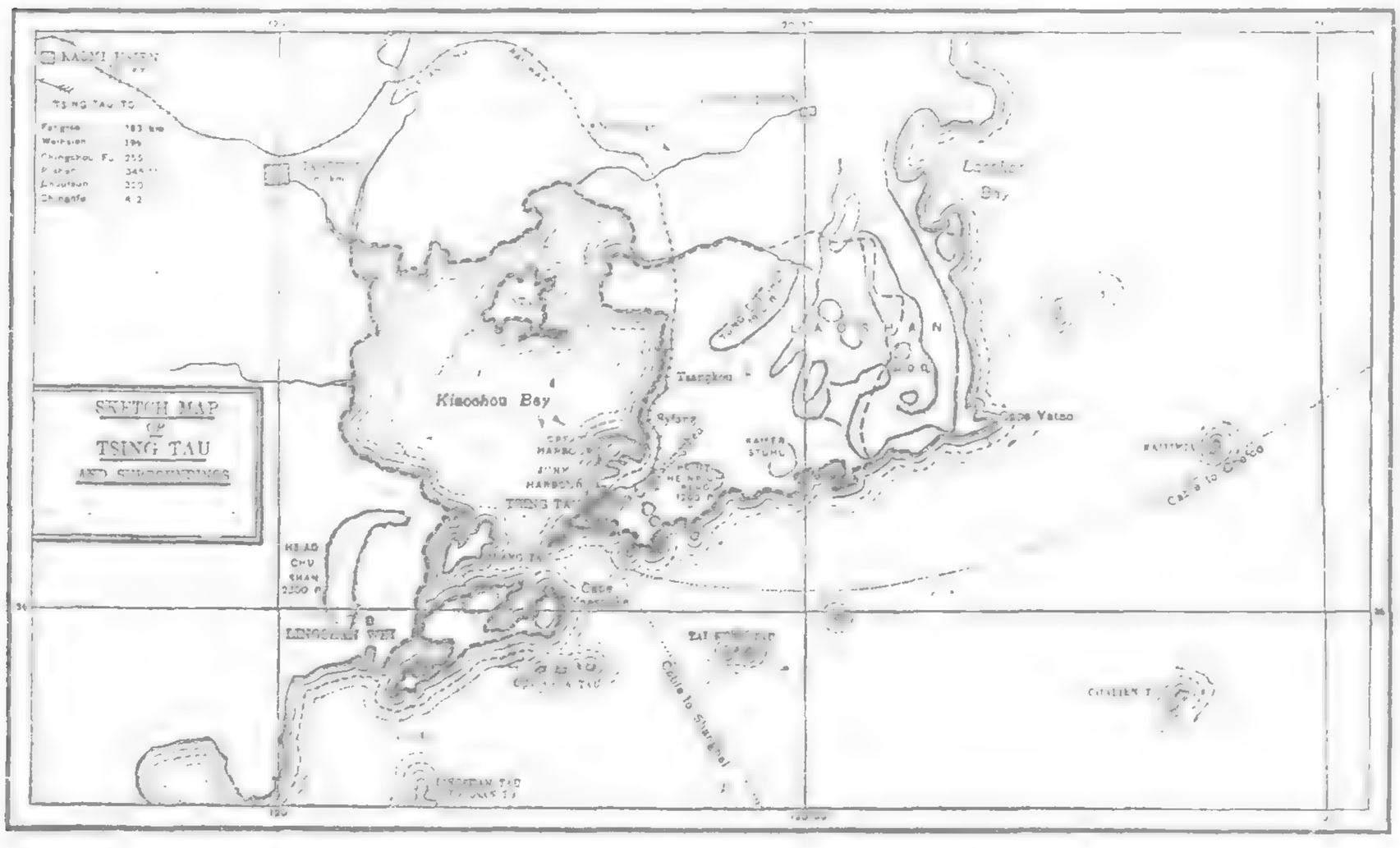
Tsingtau, an important seaport in Shantung Province, is situated at the entrance to Kiaochau Bay, in lat. 36 deg. 5 min. N., long. 120 deg. 18 min. E. Kiaochau Bay is an extensive inlet two miles northwest of Cape Jaeschke. The entrance is not more than $1\frac{3}{4}$ miles across, the east side being a low promontory with rocky shores, with the city of Tsingtau about two miles from the point of the peninsula. On the west side of the entrance is another promontory with hills rising to about 600 feet. The shore here is rocky, but on the east side is a good stretch of sandy beach. The bay is so large that the land at the head can only just be seen from the entrance, about 15 or 20 miles away, and the water gradually gets shallower as the north side of the bay is approached. The hills, formerly bare rocks, are now green with vegetation due to an extensive scheme of afforestation.

The history of the port is that, formerly an insignificant fishing village, it was occupied by a German squadron on November 14th, 1897, as a consequence of the murder of two German missionaries by a Chinese mob, and a lease was obtained by Germany from the Chinese Government for a term of 99 years. When Tsingtau was occupied by the Germans, their special attention was devoted to agricultural, commercial and mining development in their territory and in Shantung Province. The Protectorate developed to an unlooked-for extent under the policies of the Administration. In 1899 work was begun on a railway which in June, 1904, was opened to Tsinanfu, in the interior of Shantung, through a mining district in which coal mines have been successfully operated. In October, 1905, operation was begun on a large dry dock. Large industries under foreign ownership and management were founded.

On September 2nd, 1898, Tsingtau was declared a free port, the area of the free zone comprising the whole colony. This state continued until 1906, when Germany entered into a customs union with China by which the Maritime Customs was to collect the ordinary duties there as in the other treaty ports, with the stipulation that 20 per cent. of the revenue was to be paid to the German Government. As the port had developed from insignificance to a prosperous manufacturing and shipping centre under the former arrangement, by which the merchant could there store, free of duty, his wares from abroad or his raw materials brought from the interior of China, the harbor was kept open as a free area, much on the same lines as the German free ports of Hamburg and Bremen. The Customs is concerned only with goods exported from the interior through Tsingtau to points beyond, and with exports from outside points to Chinese territory. However, Chinese produce coming from the interior for local use in Tsingtau is free of duty, and the produce of Tsingtau is similarly free from export tax. The new arrangement has met with the satisfaction of all the parties concerned in it.

The temperate climate and the excellent beach have brought Tsingtau into prominence as a summer resort. Its cleanliness, hygienic conditions, electric lighting facilities, water supply, sewerage, and other modern facilities are excellent, all being up to the standard of the other ports under foreign control.

When the European War broke out in 1914, Japan, under the terms of her alliance with Great Britain, advised Germany to disarm all her armed vessels in Chinese and Japanese waters and to hand Tsingtau over to Japan with a view of its eventual restoration to China. Germany did not reply to this communication. On August 23rd Japan declared war against Germany and took measures at once, in cooperation with British forces, to blockade and invest the port, which in the meanwhile had become a refuge for some thousands of Germans from other ports in China. The bombardment of the place by land and sea began on September 27th and the garrison capitulated on November 7th after all the forts had been taken by a final night attack. Upwards of 5,000 prisoners were taken and conveyed to Japan for internment until the end of the war. The former government of the German Protectorate and the railway to Tsinanfu are now administered by the Japanese.



The population of the port, from the census of 1916, consists of 77,052 Chinese, 18,563 Japanese, and 146 other foreigners. These figures do not include 199 Germans and Austrians. Along the Shantung Railway there are 3,361 Japanese. In 1910 the population

of Tsingtau consisted of 34,180 Chinese and 4,084 foreigners, of whom 2,275 were military and government officials.

TRADE AND INDUSTRY.—Tsingtau is amply supplied with factories of many kinds. Before the war there were albumen factories, a brewery, a soap factory, a Government slaughter house and ice plant, a large hat factory, and many small plants for the conditioning of Chinese raw products for export. Industries which came with the Japanese occupation are a large Japanese brewery, a refrigerating plant constructed for supplying the War Department in Manila with frozen beef and meats and the Russian troops with preserved meats, a silk filature, a bone powder mill, a soap factory, an ice factory, a canning plant, a flour mill, cotton mill, salt refinery, egg and albumen packing plants, match factories, an oil refinery, a factory for producing peanut oil, and the Shantung Chemical Industry Company. With the single exception of the meat packing plant, all these industries are of Japanese ownership.

It must be remarked that the Japanese have been very active in establishing many and varied industries and laying plans to attract produce from the interior along the railway from Tsinanfu. Perseverance in this direction will no doubt, in time, cause Tsingtau to outrival Tientsin. Of the 12,000 foreign visitors to the port in 1917 it is interesting to note that about 10,000 were of Japanese nationality.

Peanuts (groundnuts) and peanut oil generally form the leading export staple, although first place is often taken by some other product. Other important exports are strawbraid, coal, Chinese glassware produced at a factory served by the Shantung Railway, pottery, paper, silk, bristles, raw cotton, hides, animal tallow, and leaf tobacco. Exports, in 1917, with quantities, are given in the following table, with the quantity for 1913 given for comparison:—

METALS AND MINERALS.

	1913	1917
Copper ingots	—	677,576 piculs
Iron ore	26 piculs	1,857 ,,
Lead	—	241 ,,
Lead ore	—	15 ,,
Tin	—	28 ,,
Zinc (spelter)	18 ,,	3,956 ,,
Zinc (old)	437 ,,	4,029 ,,
SUNDRIES.		
Cattle	28,413 pieces	263 pieces
Beancake	120,509 piculs	52,759 piculs
Bones, animal	22,968 ,,	53,015 ,,
Bristles	3,675 ,,	4,654 ,,
Coal	161,523 tons	146,711 tons
Coke	627 ,,	30,971 ,,
Cotton, raw	48,275 piculs	9,577 piculs
Cuttle-fish	1,237 ,,	681 ,,
Dates, black	87,484 ,,	5,538 ,,
Egg albumen	1,602 ,,	184 ,,
Egg yolk	9,009 ,,	830 ,,
Eggs, fresh	27,056,000 pieces	2,205,360 pieces
Glassware, native	6,725 piculs	6,567 piculs
Groundnuts (peanuts)	114,849 ,,	107 ,,
Groundnut kernels	910,637 ,,	410,762 ,,
Hair, human	94 ,,	26 ,,
Hats, straw	187,708 ,,	16,965 ,,
Hides, buffalo and cow	38,857 ,,	35,354 ,,
Hair nets	560 Taels	90,749 Taels
Meats, fresh or frozen	37,007 piculs	69,005 piculs
Oil, bean	26,679 ,,	107,073 ,,
Oil, castor	—	4,493 ,,
Oil, groundnut	147,122 ,,	248,387 ,,
Salt	351,495 ,,	1,129,272 ,,
Silk, raw, manufactured and cocoons	20,512 ,,	9,191 ,,
Skins (fur), dog	13,532 pieces	—
Skins (fur), goat	131,826 ,,	75,235 ,,
Strawbraid	87,288 piculs	10,643 ,,
Tallow, animal	31,858 ,,	27,447 ,,
Walnuts	14,352 ,,	518 ,,
Wool, sheep's	3,099 ,,	8,618 ,,

The value of foreign imports in 1917 was Tls. 22,538,383; of Chinese imports Tls. 9,532,838. Exports in the same period were valued at Tls. 25,711,770. The combined trade, therefore, was Tls. 57,782,991. In the following table the direct export and import trade in earlier years, with its distribution by foreign countries, is given for comparison with the 1917 figures, but as 1914 and 1915 were marked for their unsettled trade conditions the figures for these years are not given:—

	1912			1913		
	Imports Hk.Tls..	Exports Hk.Tls.	Total Hk.Tls.	Imports Hk.Tls.	Exports Hk.Tls.	Total Hk.Tls.
France	0.01	4.82	4.83	0.02	3.44	3.46
Germany	2.84	1,88	4.72	2.89	2.28	5.17
Hongkong	1.99	0.11	2.10	1.82	0.39	2.21
Japan	6.75	0.91	7.66	8.30	2.12	10.42
Russia, Pacific Ports	0.08	0.95	1.03	0.10	2.40	2.50
U.S. of America	1.33	0.05	1.38	0.80	0.36	1.16
Other Countries	1.70	1.75	3.45	1.53	1.97	3.50
Total	14.70	10.47	25.17	15.46	12.96	28.42

	1916			1917		
	Imports Hk.Tls..	Exports Hk.Tls.	Total Hk.Tls.	Imports Hk.Tls.	Exports Hk.Tls.	Total Hk.Tls.
France	—	—	—	—	—	—
Germany	—	—	—	—	—	—
Hongkong	1.29	0.16	1.45	2.02	0.24	2.26
Japan	11.06	15.56	26.62	12.89	15.51	28.49
Russia, Pacific Ports	0.00	0.11	0.11	0.00	0.30	0.30
U.S. of America	0,74	—	0.74	2.06	0.31	2.37
Other Countries	1.17	0.52	1.69	0.76	0.54	1.30
Total	14.26	16.35	30.61	17.82	16.90	34.72

The figures indicate millions of taels.

The statistics in the foregoing table give the direct foreign trade only, and do not include foreign goods which passed through Chinese ports en route. It will be seen that Germany has completely disappeared from the list; Hongkong remains almost constant; and the share of Japan, as might be expected, has advanced from 30 per cent. in 1912 and 36.6 per cent. in 1913, to 86.9 per cent. in 1916 and 82 per cent. in 1917; while the share of the United States, though small, has improved.

Imports from foreign sources included cotton goods of various kinds, woollens, iron and steel in various forms, tinplates, gunny bags, brass buttons, candles, cigarettes, cigars, clocks, coal, dyes, electrical material and fittings, enamelled ware, flour, window glass, lamps and lampware, matches, condensed milk, needles, kerosene oil, paper, soap, soda, household stores, sugar, timber, wines and spirits, etc.

A feature of the port in 1917 was the transport of coolies from Shantung to France. Twenty vessels sailed with over 40,000 men. Arrangements were the same as mentioned in the description of Weihaiwei.

MINES AND MINERALS.—Both coal and iron abound in Shantung. Coalfields near Tsingtau are at Fangtze, Hungshan, Poshan, Tawenkow, Ichow and Yihsien. The first three are in the sphere of the Shantung Railway concession. The average daily output of Fangtze is 900 tons, and of Hungshan 950 tons. The Hungshan coal is the best and is suitable for steam purposes;



VIEW OF GREAT HARBOR, TSINGTAU

the seams can be mined about 30 per cent. cheaper than at Fangtze. The Fangtze coal is nearly all used in the province, while the Hungshan coal is used by vessels calling at Tsingtau and by the Shantung Railway. About 8,000 Chinese are employed at these two mines. Near the Hungshan mine is a large and rich deposit of iron ore.

The Poshan mines produce 200,000 tons annually, which is consumed chiefly in the Tsinanfu district. Primitive methods are largely employed, except that small native miners can rent modern pumps from a Chinese company at Tsinanfu. The mines are in the Poshan Valley, 70 miles east of Tsinanfu. The valley, which is about 20 miles long and from a few hundred yards wide at one end to six miles in width at the northwest, is described as one vast coal-bed, which radiates in different directions.

The Tawenkow region is about 4 kilometres from the Tientsin-Pukow Railway, south of Taianfu. The mines are worked in semi-foreign style; the output is small and of inferior quality.

The Ichow mines are 15 kilometres southwest of Ichowfu; the fields are worked by primitive methods.

The Yihsien coalfield is considered the best in Shantung as regards stratification, thickness of seams, and quality of coal. Their output is estimated at 200 000 tons annually. Yihsien is connected by a railway 7 miles in length to Taierchwang on the Grand Canal.

Gold has been washed in Shantung for centuries, but the gold mines had not been developed by foreign methods.

TRANSPORTATION FACILITIES.—All the China coast lines use this port. Formerly it was a port of call for seven ocean-going lines, but it has suffered from the shortage of shipping space with most other ports. Deep sea vessels calling here since the war have been mostly transports or other vessels for the transportation of coolies to Europe. Tsingtau enjoys frequent service to Shanghai, Dairen, Tientsin, Hongkong, Canton, Vladivostock, Kobe, and less frequent sailings to other Japanese and Chinese ports. In 1917 the entries of steamers amounted to 756 vessels of 802,069 tons. Of these 66 were British and 12 American, and in turn 18 and 10 of these respectively were transports. All French steamers calling in the same period were also transports, while the Russian entries were from the Volunteer Fleet. Danish and Norwegian vessels in the list bore kerosene oil. Japanese shipping heads the list with 627 entries of steamers of 558,596 tons.

Junks entered and cleared during the year were 11,017 with a total capacity of 3,131,568 piculs.

The Shantung Railway extends from Tsingtau 256 miles to Tsinanfu, the capital of Shantung Province. The line connects with the wharves and godowns at Tsingtau at one end and at Tsinanfu, with the other terminus, with the Tientsin-Pukow Railway, which in turn connects with Peking and the northern Chinese lines in one direction and with the railway from Nanking to Shanghai in the other. A branch of the Shantung Railway extends 26.9 miles to the Poshan and Hungshan mines, and the line passes through the important market of Weihsien en route. The railway has made a good record in goods and passengers carried and in dividends.

PORT FACILITIES.—The water frontage is divided into three harbors, the most northerly of which, the Great Harbor, is the free zone; next the dock harbor; and to the extreme south the small harbor. The Great Harbor is a basin for ocean steamers. On the northeast and west it is enclosed by a breakwater, and the southern boundary is made by two piers. There is ample depth of water. The largest vessels can come alongside the wharves and leave at any state of the tide all the year round. The harbor is never closed by ice. The quayage is over 5,500 feet in length, of which 600 feet is owned by the Shantung Coal Mining Co., where 800-1,000 tons of coal per day can be loaded. There is accommodation for about 12 vessels along the quays. Cargo is discharged into and loaded from massive concrete godowns built on the wharves, directly connected with the railway lines. Heavy lifts may be discharged into trucks brought alongside vessels. The small harbor is intended for receiving coasting steamers and junks. It has breakwaters at its south and northeast sides, and is provided with a pier on which the railway has its tracks. In addition to these facilities there is another pier in Tsingtau Bay, on the southern side of the peninsula.

THE FREE HARBOR.—The free zone consists of the Great Harbor and such territory on the land side as is needed for handling cargo. The border on the land side is the railway embankment and a provisional fence, which has been extended from time to time as required. At the entrance, on the main street leading into the free zone, is the Custom House and the Customs gate station, where all goods inward and outward must pass. The boundary on the water side is the breakwater.

On the wharves are seven large godowns for inward and outward cargo. These godowns are let to the shipping firms, so that each firm may have separate accommodation for its vessels and compartments for import and export cargo. Cargo can lie in these godowns for 10 days free of charge. Cargo undelivered after 10 days is removed, under Customs control, to the Government warehouse, where a storage fee is changed, or to private godowns, of which there are a number in the free area. In the shipping godowns on the wharves are Customs offices at the land side gates. Imports are there examined, released after payment of duty, and provided with a permit to pass the Customs gate station. Exports are also examined there and after payment of export duty are stored in the export compartment in anticipation of the vessel's arrival. On arrival of the vessel, the manifest and cargo certificates are taken delivery of by the Customs boarding officer, and the discharge of the import cargo into the import compartment is proceeded with at once, also at night and on holidays, without permits or Customs control. Duty-paid export cargo from the export compartment may also be taken on board at once, but under the supervision of a Customs officer, who issues shut-out cargo certificates if required. Under this arrangement vessels can be entered and cleared, under guarantee, before arrival; and as they can work at night and on holidays without hindrance, they save both time and expense.

PILOTAGE.—Pilotage is compulsory, but free. Pilots board the vessels off Arcona Island, just off the port.

PORT CHARGES.—Tonnage or wharf dues, 1 cent Mex. per registered ton per diem. Customs, nil. Light dues, nil. Other charges, nil.

LABOR COSTS.—Stevedoring: rates for loading and discharging cargo, 14 cents Mex. per ton. Overtime cost per hour, 20 per cent. extra. Cost per hour for general labor, about 5 cents Mex.

DOCK.—The floating dock can accommodate a steamer of 16.000 tons. The extreme length is 410-ft., breadth at entrance 100-ft., depth on sil at high water, ordinary spring tides, 30-ft. It is equipped with two 20-ton electric cranes. This dock has been taken to Japan.

MERCHANTS.—F. J. Bardens; Butterfield & Swire (John Swire & Sons, Ltd.); Cornabe, Eckford & Co.; Jardine, Matheson & Co., Ltd.; Misui Bussan Kaisha, Towa & Co.

[See FAR EASTERN REVIEW, November, 1914, for descriptions of mines and railways, as well as all agreements concerning Shantung. Also November, 1918, for additional documents.]

Weihaiwei

Weihaiwei, in the Province of Shantung, situated in lat. 37 deg. 30 min. N., long 122 deg. 10 min. E., is a port on the Bay of Weihaiwei, a part of the British Leased Territory. The Territory comprises the Island of Liukung, all the islands in the Bay, and a belt of land 10 miles wide along a coast line of 72 miles. The total area of 285 square miles contains 330 native villages, with a population estimated at 146,000. In addition to this property, there is a British sphere of influence comprising that portion of Shantung lying east of the Meridian 121 40, with an area of 1,500 square miles. Weihaiwei faces Port Arthur across a 115-mile expanse of sea, on the northwest, and is about the same distance from Tsingtau on the southwest. The port of Chefoo is about 40 miles to the west.

Weihaiwei was formerly the headquarters of the Chinese Admiralty. The port was occupied by the Japanese in 1895, and held by them pending the payment of an indemnity. The indemnity was liquidated in 1898, but prior to this the Chinese Government arrived at an agreement with the British Government by which the port and territory were leased to the British from July, 1898, on the stipulation that it would be held by the latter "for as long a period as Port Arthur shall remain in the occupation of Russia." Weihaiwei is the summer station of the British Asiatic Squadron. The Chinese Government is permitted to use the Bay for its fleet so far as it is compatible with British interests.

The city consists of the European quarter, Liukung Island and the walled native town of 7,000 population. A scheme of afforestation has been carried out by which the surroundings, formerly bare of vegetation, are now green with plant life. The harbor is sheltered by hills on the southwest and northwest and is open to the

sea on the east. The territory is administered by a Commissioner. The village communities are administered through their headmen in accordance with Chinese laws and usages, and all purely civil matters are left as much as possible to the headmen.

In the beginning of the year recruiting of labor for service in France was begun by the British Government, and some 50,000 coolies were transported from Weihaiwei. Wages in this service range from 1 franc a day beginning with the date of arrival at the place of employment, plus $10 Mexican a month payable in China, to 5 francs a day and $30 Mexican a month, the last named amount being the salary of an interpreter. The allotments are paid chiefly through the Chinese Postoffice. The men receive a bonus of $20 on the departure of the ship, of which $15 is paid to their family. Not only will the province benefit by this influx of wealth, but the knowledge and experience gained abroad will be of great value to the province when the laborers return to their homes.

COMMERCE.—Weihaiwei is a free port, and there are no customs duties of any kind. No statistics of trade are available from the Maritime Customs, as there is no station there. As the port is on a promontory of restricted area, which is served by the two important ports of Kiaochow and Chefoo, the trade passing through is not great. Salt fish appears to be the principal native export and peanuts the largest export to foreign countries.

TRANSPORTATION FACILITIES.—The coasting vessels of Butterfield & Swire and Jardine, Matheson & Company call weekly or twice weekly on the voyage between Shanghai and Tientsin. A regular weekly service from Shanghai for the carriage of mails and passengers is assured throughout the year under Government subsidy. There is launch service to Chefoo every other day, the trip being made in 4-6 hours.

PORT FACILITIES.—There are three piers, the largest one of iron, being reserved for the use of the Squadron; the next in size, of stone construction, is for general use; and the third and smallest is used for junks. Vessels anchor in the harbor in sheltered spots according to the prevailing wind and discharge and load by lighters.

MERCHANTS.—D. Clarke & Co.; Cornabe, Eckford & Co.; William Forbes & Co.; Lavers & Clark.

Chefoo

Chefoo, in Shantung Province, is situated in latitude 37 deg. 33 min. N. and longitude 121 deg. 25 min. E. It lies on the south coast of the Gulf of Pechili, across which it faces Port Arthur, Dairen and Newchwang. Originally a mere fishing village, Chefoo has advanced steadily in prosperity since its opening to foreign trade in 1862. The population is estimated at 54,500.

The climate of Chefoo is comparatively mild, the temperature rarely rising above 90 deg. F. in summer and hardly ever falling more than 15 degrees below freezing in winter. The rainy season begins in July and ends in the middle of August. Snow usually falls in the beginning of November.



CHEFOO BREAKWATER UNDER CONSTRUCTION

The foreign quarter is known as Yentai among the natives, and is a promontory on the opposite side of the harbor from the Chinese city of Chefoo. The municipal affairs of the foreign quarter are looked after by a committee of six foreigners and six Chinese. Its revenue is derived from voluntary subscriptions.

As the province of Shantung is densely populated great numbers of laborers from the province leave each year by way of Chefoo for Siberia and Manchuria to seek employment, the emigrants numbering 100,000 annually. These coolies usually leave in the spring and return in the autumn, although a few remain away for a number of years or until they acquire prosperity.

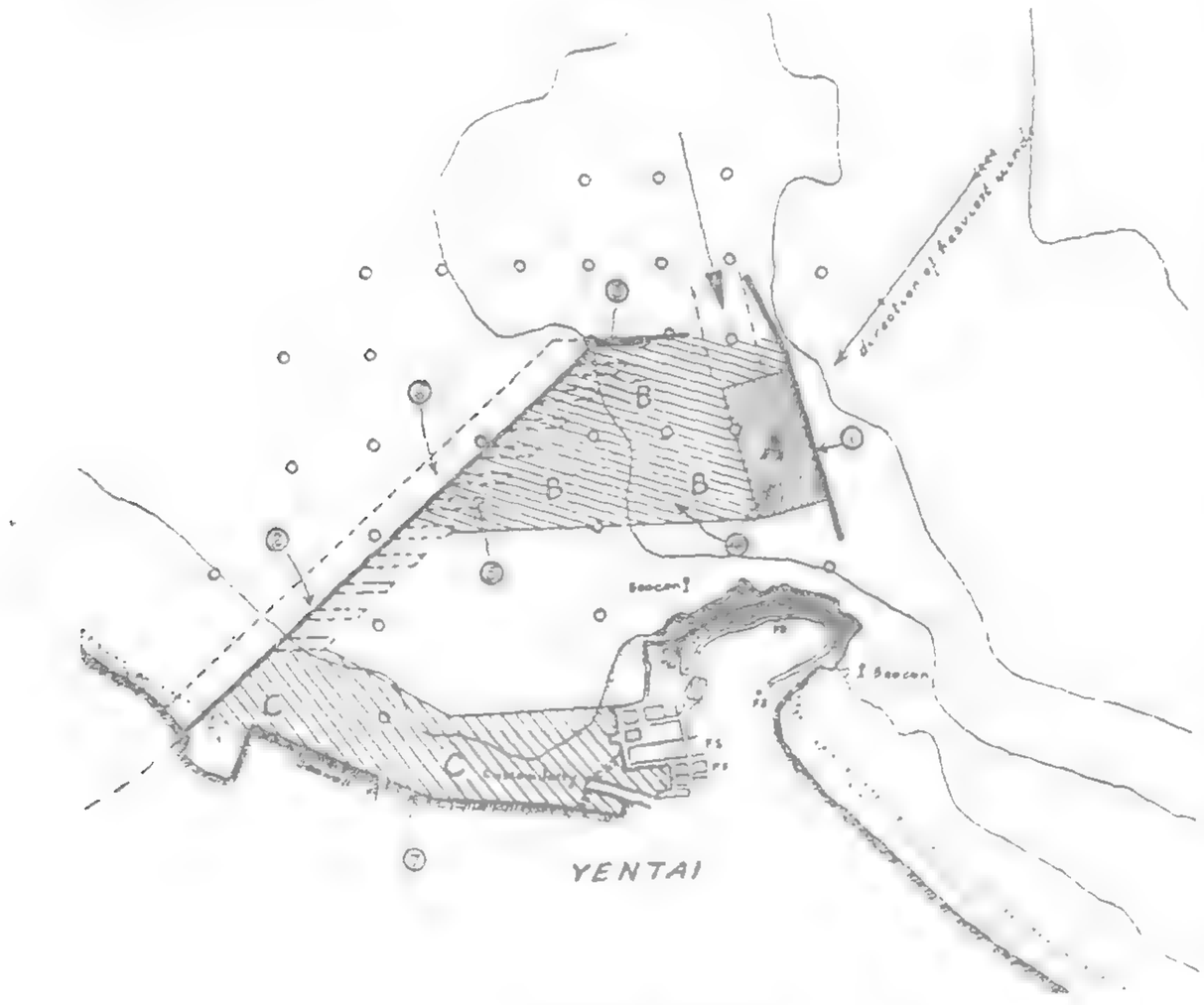
The depreciated value of the Russian rouble in the purchase of silver (the rouble now being worth about 11 Mexican cents) has prevented the usual emigration to Siberia within the past year, with the result that in 1917 only 6,000 coolies left for Vladivostock.

COMMERCE AND INDUSTRY.—Chefoo is famed for its exports of pongee and other silks, and fresh fruits. A large export trade is also done in strawbraid, beancake, vermicelli, peanuts, hairnets, and preserved fish for native consumption. The port at one time did a large trade with Manchuria, but its supremacy in this field was taken away by the development of Tsingtau and its railway communication with the interior, and in addition the opening of Dairen and Antung to foreign trade diverted Manchurian trade direct to Shanghai.



CHEFOO HARBOR

Chefoo manufactures hairnets which eventually reach all parts of the world. The value of this item of export alone in 1917 was Tls. 653,000, but this accounts only for the nets which passed through the Customs. Nets to the additional value of about Tls. 800,000 went direct to America by letter post. The hairnet



CHEFOO HARBOR

Works being executed at present :—(1) breakwater, (2) jetty with, (3) quay-wall, (4) dredging-works.

Works to be executed in future :—(5) lateral piers, (6) quay for tracks and godowns, (7) improvement of existing works.

industry was formerly carried on with the use of imported hair. Most of the hair formerly imported was really human hair which had been exported from China, split into the fine strands used in the making of hairnets, and then returned to China for the weaving process. Lately the Chinese have learned the bleaching and preparation of human hair of local origin, for the weaving of nets.

Another industry is the manufacture of lace, the export of which was valued at Tls. 581,000 in 1917.

Chefoo imports much ginseng from Korea, which is re-exported to Chinese markets. The value of this export in 1917 was Tls. 2,900,000. Of the native exports, amounting to Tls. 15,341,115 in 1917, a great part consisted of cocoons imported from Manchuria which were reeled or made into silk and exported to Chinese markets and abroad.

In 1917 imports of foreign goods amounted to Tls. 12,344,863, of which Tls. 4,605,687 was re-exported. Imports of native goods amounted to Tls. 10,526,086.

Among the 1917 exports may be noted beancake (184,831 piculs, compared with 329,862 piculs in 1913, since when the decline has been steady), beans and peas (7,890 piculs), fresh eggs (810,976 pieces, compared with 6,145,310 in 1913, 7,266,790 in 1914, 12,938,660 in 1915 and 5,556,835 in 1916), peanuts (in shell 23,322 piculs; peanut kernels 103,407 piculs), liquorice (16,405 piculs), bean oil, peanut oil and sesamum oil; wild raw silk (9,095 piculs); Shantung silk pongees (12,676 piculs); strawbraid (3,883 piculs); vermicelli (161,165 piculs); and 4,036 dozens of wines and spirits in foreign style.

Exports of Chinese goods amounted to Tls. 15,341,115.

PORT FACILITIES.—The harbor has been exposed to north winds in winter which sometimes produce choppy waves and force the steamships lying at anchor to make for the shelter of the bluff, but the Chefoo Harbour Improvement Commission is making very extensive improvements to the Port of Chefoo by forming a protected Harbour, having two entrances, by the construction of a detached breakwater and a mole connected with the shore, enclosing an area of some 323 acres, of which 112 acres are to be dredged to a depth of 20 feet and 9 to a depth of 25 feet below low water.

The breakwater will be 2,600 feet long, of composite type, with rubble mound foundation surmounted by a wall of large masonry blocks capped by masonry built in situ, each extremity being formed by a reinforced-concrete caisson.

The mole will be 5,890 feet long, consisting of a sand mound protected by brushwood and rubble, surmounted by a rubble mound above water level. Inside the northern arm there will be a quay wall 600 feet long, of similar construction to the breakwater.

The contract for carrying out this scheme was let to the Netherlands Harbour Works Co., and Mr. C. Rickard was appointed Engineer-in-Chief to the Commission. Work was commenced in August, 1915. Very considerable progress has been made. The foundations are now practically complete for the full length of the breakwater, more than half the total number of blocks have been set, and the masonry superstructure is well advanced. The south caisson is in position and the north one is made and ready for placing. The lower part of the mole is under construction for the whole length, 4,500 feet being practically completed. Some 800,000 cubic yards of sand and 87,000 square yards of brushwood mattresses have been deposited in the lower part, and 14,000 tons of rubble in the superstructure. The two caissons, a number of blocks and the rubble foundation have been prepared for the quay wall. About 8,000 tons of cement have been used on the works and altogether 60,000 cubic yards of masonry have been built in blocks and superstructure and 240,000 tons of rubble used in foundations.

An abnormally bad storm was experienced in August, 1917, and the following months were rough with many unworkable days. The winter was cold, and practically all outdoor work was stopped from the middle of December to April 1.

The work which was displaced or damaged by the storms last year has now been made good, and as an extra precaution an additional row of large blocks is being deposited outside the original one for a length 250-ft. from the south end.

Very good progress was being made with the superstructure of the western mole and about 1,450-ft. was practically complete to its full height when the storm already referred to struck it and unfortunately carried away the upper part down to a level of a little above low water. The lower part suffered no damage. For a time all work, except the salving of contractor's plant and a small amount of work on the foundations, had to be abandoned.

On account of the damage done to both mole and breakwater by this storm, a great deal of consideration was given to the question of whether certain changes in the design were advisable. Mr. D. C. Dick, Engineer-in-Chief to the Customs, was called in to consult with the Engineer-in-Chief to the Commission, and the latter and the contractors having given much deliberation to the question, the commission eventually agreed to certain modifications. The main one is the substitution of rubble for sand in the upper part of the mole, and in view of the greater reliability of this material and the expected lower cost of maintenance, the Commission considers it worth the additional time and money involved.

The treasurer's report states that finance has been arranged by the Government granting a loan at 5 per cent. of the amount due on the contract from January 1, 1918, and it has since undertaken to grant Hk. Tls. 110,000 to meet the cost of the alterations mentioned in the Chief Engineer's report. The total expenditure from July 1917 to June 1918 has been Ch. Tls. 301,469.54 while the collections and grants have amounted to Ch. Tls. 368,349.81. Of this, Tls. 108,756.92 has been collections from dues, Tls. 228,080 April and May instalments of the 5 per cent. Customs Loan, Tls. 20,952 Government grants and Tls. 10,560.89 interest on deposit note.

Normally about twenty or thirty steamers call at Chefoo each day. In 1917 1,370 steamers with a tonnage of 1,075,447 were entered. The port is in the line of communication between India, South China, Japan, Korea and Manchuria, and is an important calling place for large numbers of regular line and tramp steamers.

MERCHANTS.—Asiatic Lace and Netting Works; Butterfield & Swire; The China Merchants Pongee Association; Cornabe, Eckford & Co.; Curtis Bros.; Debenhams, Ltd.; Hwa De Hair Net Co.; Marthoud Freres; James McMullan & Co., Ltd.; Mitsui Bussan Kaisha, Ltd.; H. E. Railton & Co., Ltd.; Reiss & Co.; Frank W. Smith & Co.; Wilson Wang & Co.; Yuan Brothers & Co.; Yuan Seng Lace Manufacturing and Exporting Co.

Lungkow

Lungkow is a newly opened trade port in Shantung Province, located about lat. 37° 38 min. N., long 120° 20 min. E. It is on the sandy shores of a bay protected by the Muchitaochia peninsula, some 80 miles due west of Chefoo, 145 miles from Dalny and 170

miles from the Taku Bar—all by sea route. By land it is 13 miles from the city of Hwanghsien, 43 miles from Laichow, and 96 miles from Weihsien, on the railway from Tsingtau to Tsinanfu.



LUNGKOW—SHORE END OF NEW PIER—CONSTRUCTED OF GRANITE

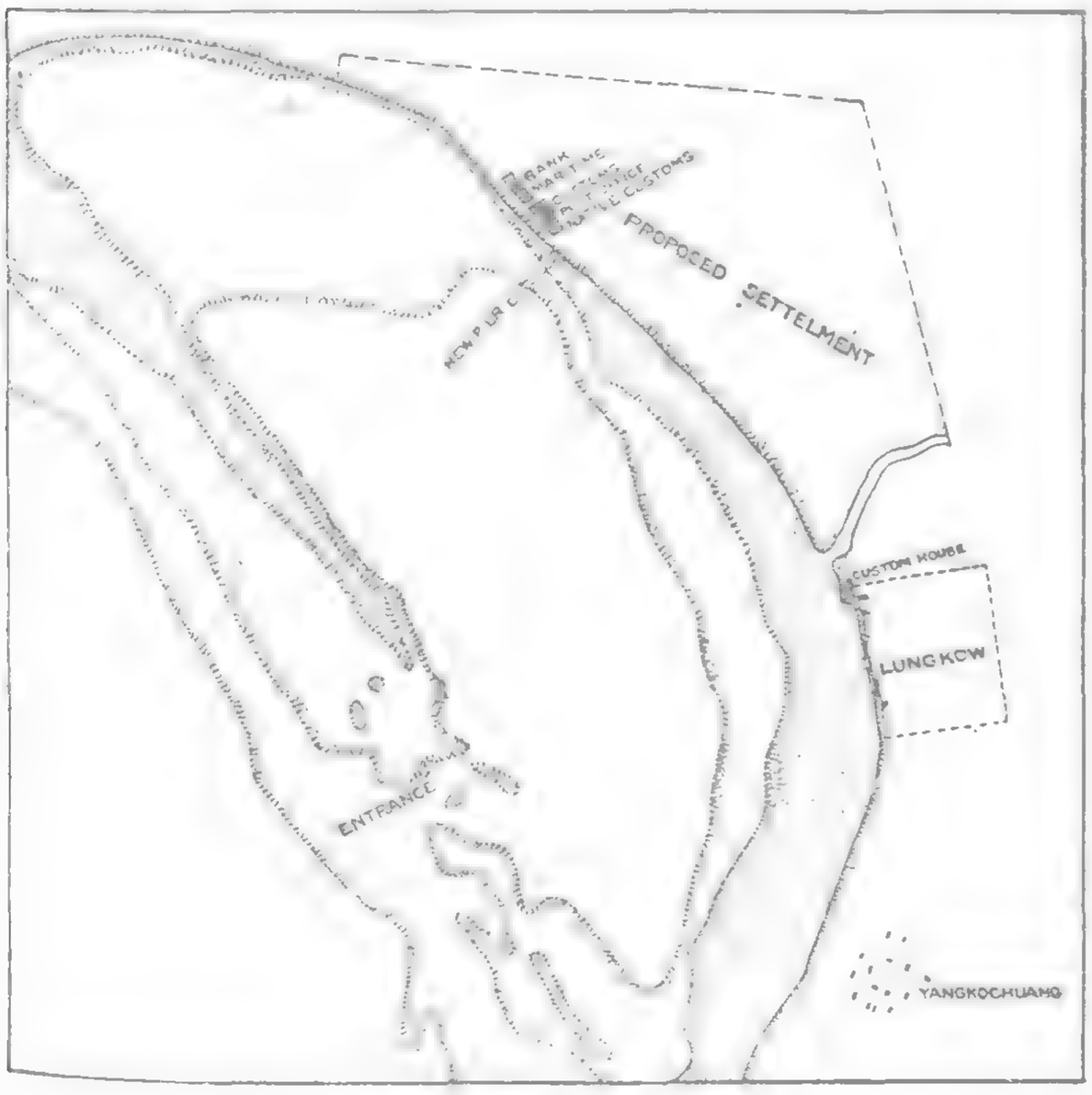
The port was used as the landing place for the Japanese force despatched to capture Tsingtau at the outbreak of war, whence they erected a light railway for the transport of guns, munitions, and equipment towards Tsingtau. The harbor is naturally sheltered by a sand bar which acts as a breakwater, is not subject to silting, and has a present depth at low water of from 11 to 13 feet. Steamers drawing 12 ft. use the port, entering by a narrow channel which permits of anchorage near the shore.

A large coolie traffic is carried on at Lungkow. Some 50,000 to 100,000 leave Shantung each year for Manchuria to harvest the summer crops and return in the fall or early winter, and it is hoped by those interested in Lungkow to secure the bulk of this traffic since Lungkow is closer to Dalny than is Chefoo. Japanese aimed at being the principal settlers at Lungkow hoping to take the lead in the development of the port, but the gentry in that section formed the Lungkow Commercial Settlement Development Company, and received authority from Peking to proceed with the work. They have the support of the Provincial Governor and are guaranteed by the Provincial Treasury up to Mex. $120,000. The present capital of the Company is $500,000, of which Mex. $150,000 was paid up half a year ago. The original company which raised funds for this work was handicapped by an incompetent manager, and though much money was expended nothing was left for the reorganized company but a few barely made roads, an old steam roller, a wooden bridge across the creek separating the settlement from the old town, and a reputation for mismanagement. The new company is proceeding to revise the planning of the city generally and is building a wharf with a pier 850 feet long. As the contract was let to Messrs. Andersen, Meyer & Co., the substantial character of the work being put into the job is guaranteed. The shorepart is built of solid granite and the balance is being built of re-inforced concrete throughout. It has a width of 30 feet and is provided with double track for Decauville cars and will be provided with a crane to take loads up to ten tons. The work started in September, 1918, and it is expected that the whole pier will be completed about the middle of this year. The Development Company also contemplates deepening the harbor to a minimum depth of fourteen feet, so as to allow coasters to call, and to provide godowns and buildings close to the pier for the storage of cargo. An electric lighting plant has already been ordered from Messrs Andersen, Meyer & Co., Ld., and it is expected that a telephone system will be arranged for shortly.

The Company's income is to be derived from wharf dues and ground rents; and, it is expected, from two to five per cent. of the sums collected as duties.

The settlement at present includes 7,000 *mow*, divided into four zones in accordance with the distance from the foreshore. First, second, third and fourth class properties are charged Mex. $30, $25, $20, and $15, respectively per month as rent, the term of lease being fifty years.

It is expected that the railway projected from Weihsien to Chefoo will have a branch to Lungkow, in which case the port will be brought into direct touch with the interior.



THE NEW PORT OF LUNGKOW

Tientsin

Tientsin, in Chihli Province, holds in the Northern Provinces the dominant position in trade, as Shanghai is the premier market in the centre. Situated at the northern terminus of the Grand Canal at its junction with the Peiho, leading north to Peking, and the Haiho, which empties into the Gulf of Pechili and provides a channel for seagoing vessels, the city is favorably situated as a distributing centre for the great trade of the north. In addition to its waterways Tientsin has rail communication with the Southern Provinces by the Tientsin-Pukow Railway which leads to Nanking and there connects with the Shanghai-Nanking line, and with Hankow by the long railway which runs from Peking and which is connected with Tientsin by a cutoff just below the Capital. It has railway communication with the north by a line running to Moukden which connects with the Manchurian railways and in turn with the Trans-Siberian road, and by the line which extends to Peking and thence to Kalgan and Fengchen.

Although Tientsin was originally some 56 miles distant from the sea through the windings of the Haiho, this distance has been reduced to about 36 miles by the river improvements which have been carried out by the Haiho Conservancy Board, of which a description is given in another section of this article. The same Board carries on dredging operations to maintain a channel over Taku Bar, which formerly acted as a barrier against the passage of seagoing vessels beyond the mouth of the Haiho, at times reducing the depth at the mouth to 3 feet. The lowest water over the Bar in 1916 was 13 feet 9 inches and the highest 18 feet 9 inches, in the artificial channel. Floods in 1917 caused the deposit of much silt at the river's mouth, and late in that year it was impossible for a vessel drawing more than 10 or 11 feet to cross the Bar. In winter (December to March) the channel is frozen, when much of the trade is diverted to the railways or to the port of Chinwangtao. Ice breakers, a part of the Conservancy scheme, are kept at work when this is possible.

The mouth of the Haiho is about 320 yards wide, but the Bar, which lies beyond, is about two miles long. Ships that do not cross must keep off about eight miles from the river mouth

Taku was brought to the notice of the world in 1900, when a large number of warships of the foreign powers assembled there and took the Taku Forts, only after a severe struggle, and landed an allied expedition which eventually reached Peking, where it relieved the siege of the legations. It was at this time, after the



The Kodak Shop, Tientsin

A WINTER'S DAY ON THE HAIHO, TIENTSIN

allied army had dictated its terms of peace from the most sacred precincts of the Imperial Palace in Peking, that permanent garrisons were stationed at Peking and on the route to the sea, and the treaty which followed also required the destruction of the forts at Taku. On another occasion, in 1858, at the time of the Anglo-French war upon China, the Taku Forts were assaulted and taken, and the treaty which followed the peace thrust upon China required the opening of Tientsin to foreign trade.

In the foreign residential section of Tientsin, with a total area of 3,550 acres, 28 per cent. of which is in the Russian Concession, there are eight concessions to as many foreign powers with six different forms of government. These concessions have been granted and added to at various times, the British coming first with a settlement leased in perpetuity in 1860, the French following in 1861 with a grant, and thereafter grants were taken up by the Russians, Italians, Germans, Japanese, Austro-Hungarians and Belgians. The United States of America was granted a concession in 1861, but abandoned it immediately, and in 1902 added it to the British Concession under an agreement providing for its return. The total foreign civilian population is normally about 3,000, but lately the number has been lessened by departures for military service. Several of the foreign powers maintain garrisons in Tientsin. A careful estimate of the Chinese population puts the number at 800,000.

In the summer of 1917, in consequence of torrential rains which followed a period of drought in the interior, a great tract of about 15,000 square miles between Tientsin and Paotingfu, in the area drained in part by the Haiho became inundated, and on September 24 the embankments of the Grand Canal near Tientsin burst from the pressure of the water and part of the foreign concessions were flooded, the depth varying from 1 to 4 feet. Dykes were built around the territories of the several powers and an effort was made to pump out the water before the winter, and in a few weeks the flood water inside the dykes was ejected. It was at this time that an abnormal deposit of silt caused a partial filling of the Taku channel. Work on the river is constantly in progress, and a Board was formed to investigate and devise means of controlling the headwaters in the great basin drained by the Haiho, so eventually Tientsin will have a deeper channel and less danger of floods.

January and February are the coldest months of the year, when the mercury often falls to 15 degrees below freezing. The winter air is dry and bracing. Wet months are June, July and August, when the rainfall is heavy. July is the hottest month, with occasional registrations of 90 degrees but rarely more. Four or five deep snows occur in the winter. There are two waterworks systems, one in the native city and the other with its headquarters in the British Concession. The former supplies water to the native quarters as well as to the ex-Austro-Hungarian, Italian, Russian and Japanese settlements, at a charge of 75 cents per thousand gallons, while the latter supplies the British, ex-German and French settlements at a charge of $1 per thousand gallons. Many natives use river water, which is carried about by wheel barrows. Drainage and sanitation are well looked after in the foreign settlements. The city is served by an ample system of electric trams.

COMMERCE AND INDUSTRY.—Tientsin is the gateway for the commerce of the metropolitan province of Chihli, as well as of Shansi and a part of Shensi, Kansu, Honan, Shantung and Mongolia. Raw cotton, sheep wool, camel wool, linseed, peanuts, goatskins, furs, pig bristles, and beans are among the most important exports

Numerous disadvantages affected the trade of Tientsin in 1917. In the early months there was internal strife and political dissension in the territory served by the port, with consequent insecurity of trade routes, commandeering of railway rolling stocks, etc. This was followed by a long drought in the interior, and on top of this came severe floods which destroyed 80,000 groups of dwellings and crops and property to the value of $100,000,000. In spite of these handicaps the net value of the total trade, inward and outward, was the largest on record, overtopping the previous record made in 1916 by 9 million taels. Part of this increase may be accounted for by the higher value of both imports and exports, but in any event it is a remarkably good record and particularly when the shortage of shipping space is considered.

Exports in 1917, totalled Tls. 42,118,824. This figure compares with Tls. 48,710,000 in 1916 and Tls. 49,859,964 in 1917. The decrease as compared with the two preceding years is accounted for by the high price of silver, which required more gold currency for the purchase of Chinese commodities priced in silver, by the lack of tonnage, by the prohibition of imports into belligerent countries, and by the lack of supplies due to internal conditions. Goods with a high value relative to their weight or bulk, which could afford the high freight rates, or raw materials needed for essential war manufactures, maintained a high level, however. The demand for skins continued, for example, and on the other hand the exports of raw cotton decreased. This latter commodity at one time was much in demand, exports amounting in 1911 to 387,351 piculs, valued at some Tls. 9,000,000, and of this quantity 275,722 piculs went to Shanghai for transhipment abroad. In 1917, exports of raw cotton amounted only to 158,192 piculs, valued at Tls. 4,410,393.

Two new exports have appeared on the Tientsin market, these being liquorice and asbestos. The export of liquorice in 1917 was 58,928 piculs, valued at Tls. 559,816. Asbestos weighing 3,704 piculs and valued at Tls. 24,853 was exported in 1917, and of this quantity 1,267 piculs was in the crude state. The manufacture of asbestos boiler composition, millboard, packing and yarn is conducted by the Tientsin Asbestos Company by a foreign process.

Another article newly introduced in certain markets, particularly in America, was the Tientsin carpet. The sudden and enormous American demand in 1916 for the real Tientsin carpet tempted the weavers to substitute an inferior article in 1917, with the result that large quantities of the inferior carpets were refused by buyers, and the trade in that year amounted to only Tls. 769,640.

Bristles have steadily increased in value and in the quantity exported, reaching 3,635 piculs in 1917 with a valuation of Tls. 123,631. Pig intestines (known to the trade as "hog casings") reached a satisfactory total with exports of 3,635 piculs valued at Tls. 123,631, and sheep intestines were exported to the weight of 693 piculs, valued at Tls. 23,561.

Hemp and jute fibres, seeds, strawbraid, horsehair, human hair, sheepskin rugs and wool were other exports to foreign ports.

Imports in 1917 were Tls. 67,198,341 of foreign goods and Tls. 33,043,496 of native goods. Of this total piecegoods account for Tls. 27,641,078, and metals and hardware for Tls. 2,110,517. As an indication of the variety of Chinese tastes and requirements, a glance down the list of the imports classified as "Sundries" by the Maritime Customs is interesting. "Advertising matter" valued at Tls. 32,198 is closely followed in alphabetical order by "Aeroplanes and accessories" with a valuation of Tls. 27,640, and this is followed by "Armadillo scales" weighing 403 piculs and valued at Tls. 26,195. A growing desire for foreign foods is indicated by the importation of 1,370 dozen tins of baking powder, and for foreign furniture by 1,074 iron beds valued at Tls. 14,755 and 42 brass beds valued at Tls. 3,063. Machine belting valued at Tls. 22,242 is only slightly less in value than the imports of bird's nests, a favorite article of diet with the wealthier natives.

Continuing down the list, the following kinds of foreign goods which reach a valuation in five figures or over may be noted:

Bottles, butter, buttons, calcium carbide, candles, cement, cheese, chemical products, chocolates, cigarettes (The value of this article of import in 1917 was Tls. 6,377,874, which compares with 4,667,269 in 1916 and 2,017,367 in 1915), cigars, clocks, coffee, corks,

bed covers, evaporated cream, cutlery, dyes, paints, electrical materials other than lamps and fans (amounting to Tls. 391,815) electric fans, electric lamps, emery cloth and sandpaper, enamelled ware, flour, furniture, garters, gas plant and fittings, gasoline, silvered plate glass, common window glass, cotton and woollen



The Kodak Shop, Tientsin

THE HAIHO AT TIENTSIN

gloves, gramophones, hardware, hose, hosiery, rubber tires, rubber manufactures, organs and pianos, scientific instruments and apparatus, American and European leather (this amounts to Tls 261,429, and in the same period leather from Hongkong, probably of foreign origin amounted to Tls. 275,266), chloride of lime, linoleum, locks, mirrors, printing machinery, propelling machinery, weaving machinery and parts, unclassified weaving machinery, sewing and knitting machine accessories, chlorate of potash, phosphorous, paraffin wax for matchmaking, Japanese matches (valued at Tls. 696,728), medical and surgical appliances and druggists' sundries, condensed milk naphthalene, needles, engine oil, American kerosene oil in tins Tls. 938,735, American kerosene in bulk Tls. 3,360,947, Sumatra kerosene in bulk Tls. 441,254, Japanese kerosene in tins Tls. 131,038, painters' oils, oilcloth, optical goods, banknote paper, calendered and sized paper from Japan, uncalendered and unsized paper from Japan, wallpaper, perfumery, photographic materials, printing and lithographic materials, silk ribbon, rope, safes and strong room doors, bathroom fittings, bar soap, toilet soap, soda ash, stationery, foreign military stores, consular and legation stores, refined sugar, telegraph and telephone materials, typewriters, cotton umbrellas, materials for making bicycles, materials for making jinrickshas, locomotives, railway carriages and wagons and parts, motor cars (valued at Tls. 269.996), motor car parts, champagne and other sparkling wines, still wines, ale and beer in bottles, brandy, gin, whisky.

Some of the principal exports to foreign countries during 1917 are shown below.

Article.		Quantity.	Value Taels
Pig iron	piculs	58,858	153,030
Zinc slabs	,,	1,541	33,293
Asbestos boiler composition	,,	2,563	13,052
Crude asbestos	,,	1,267	6,250
Asbestos sheets and packing	,,	264	14,390
Asbestos yarn	,,	87	4,251
Gunny bags	pieces	119,688	10,827
Beans	piculs	66,332	174,475
Refuse bones	,,	327,987	447,231
Bristles	,,	20,286	2,132,084
Carpets	sq. ft.	50,686	31,239
Coal	tons	26,150	104,600
Coal for steamers' use	,,	54,417	217,668
Coke	,,	5,575	47,388
Raw cotton	piculs	158,192	4,410,393
Dried egg albumen and yolk	,,	189	7,000
Moist egg albumen and yolk	,,	1,990	40,845
Dried egg albumen	,,	7,602	812,502
Dried egg yolk	,,	14,879	495,013
Moist egg yolk	,,	15,160	224,368
Fresh eggs	pieces	58,456,010	336,122
Hemp fibre	piculs	52,542	683,046
Jute fibre	,,	43,713	227,307
Peanut cake	piculs	13,580	17,382
Peanuts, unshelled	,,	22,829	70,770
Peanut kernels	,,	104,067	482,817
Goat hair	,,	2,599	32,872
Goat hair, refuse	,,	4,078	41,977
Horse manes	,,	3,832	87,652
Horse tails	,,	2,842	136,260
Human hair	,,	4,606	43,966
Horse hides	,,	17,539	419,785
Cow hides	,,	17,910	718,728
Animals hoofs	,,	5,619	19,010
Cow horns	,,	1,576	16,548
Intestines, pig	,,	3,635	123,631
Intestines, sheep	,,	693	23,561
Lard	,,	2,152	31,898
Liquorice	,,	58,928	559,816
Bean oil	,,	585	4,973
Castor oil	,,	7,685	63,401
Cottonseed oil	,,	66	512
Peanut oil	,,	13,579	137,556
Potash	,,	246	1,341
Cottonseed	,,	64,951	87,722
Linseed	,,	162,060	525,793
Rapeseed	,,	73,185	246,281
Dogskin mats	pieces	203,873	184,299
Antelope rugs	,,	6,340	4,299
Goatskin rugs, black	,,	17,713	20,045
Goatskin rugs, grey	,,	54,907	74,474
Goatskin rugss, white	,,	28,770	38,206
Goatskin rugs, mixed	,,	10,136	11,454
Sheepskin rugs	,,	21,600	26,848
Antelope skins	,,	30,053	20,736
Badger skins	,,	3,490	1,577
Dogskins	,,	3,252	919
Foxskins	,,	12,986	70,125
Tanned goatskins, black	,,	38,803	39,463
Tanned goatskins, grey	,,	380,827	287,822
Tanned goatskins, white	,,	50,002	50,852
Untanned goatskins	,,	3,672,503	2,247,438
Hare and rabbit skins	,,	42,348	6,352
Kidskins, tanned	,,	83,020	18,953
Lambskins	,,	122,417	67,824
Marmot skins	,,	50,756	11,197
Tanned sheepskins	,,	1,320	600
Untanned sheepskin	,,	1,520,872	874,519
Squirrel skins	,,	1,095	1,951
Weasel skins, with tails	,,	22,522	7,636
Yak tails	,,	272	19,307
Strawbraid, colored	piculs	534	29,904
Strawbraid, mottled	,,	18,184	727,360
Strawbraid, white	,,	9,538	667,660
Animal tallow	,,	28,614	407,749
Black tea	,,	7,297	218,958
Walnuts, unshelled	,,	36,475	180,543
Walnuts, shelled	,,	7,266	95,345
Camels wool	,,	33,229	1,292,360
Goats wool	,,	12,874	463,477
Sheeps wool	,,	252,881	8,314,727

Figures for 1918

The principal imports and exports of Tientsin in 1918 are given in the following table:—

Article.	Unit.	Imports.
PIECE GOODS :—		
Shirtings, grey, plain, American	pieces	7,200
Shirtings, grey, plain, English	,,	83,154
Shirtings, grey, plain, Japanese	,,	107,932
Sheetings, grey, plain, American	,,	57,701
Sheetings, grey, plain, English	,,	360
Sheetings, grey, plain, Japanese	,,	590,631
Shirtings, white, English	,,	122,151
Shirtings, white, Japanese	,,	96,635
Drills, grey, plain, American	,,	870
Drills, grey, plain, Japanese	,,	451,670
Jeans, grey, plain, English	,,	10,795
Jeans, grey, plain, Japanese	,,	154,659
T-Cloths, English	,,	72,331
T-Cloths, Japanese	,,	244,422
Lawns, plain, English	,,	8,028
Lawns, plain, Japanese	,,	196,182
Chintzes and Plain Cotton Prints	,,	204,942
Turkey Reds, Japanese	,,	78,450
Cotton Italians, plain black	,,	—
Cotton Italians, plain colored	,,	138,906
Cotton Venetians, dyed, plain	,,	40,210
Cotton Poplins, dyed, plain	,,	6,606
Cotton Italians, dyed, Figured	,,	25,135
Cotton Venetians, dyed, Figured	,,	4,943
Cotton Poplins, dyed, Figured	,,	55,969

Article.	Unit.	Exports
Velvets, Velveteens and Velvet Cords	yards	498,636
Handkerchiefs	dozen	88,220
Cotton Yarn, English	piculs	—
Cotton Yarn, Indian	,,	50,314
Cotton Yarn, Japanese	,,	197,023
Cotton Thread, on Spools, 100 yds. English	gross	38,076
Cotton Thread, on Spools, 100 yds. Japanese	,,	26,017
Silk Piece Goods	value	5,225
Silk Piece Goods, Japanese	,,	4,596
METALS :—		
Copper Ingot	piculs	475
Copper Ingot Japanese	,,	2,841
Iron Angles	,,	4,292
Iron Bars	,,	52,725
Iron Hoops	,,	18,592
Iron Nails, Wire	,,	12,636
Iron Plates	,,	26,756
Iron Sheets, Galvanized	,,	7,968
Iron, Old	,,	8,587
Tinned Plates	,,	60,049
SUNDRIES :—		
Bags, Gunny, New	thousand	254
Braids, Cotton	pieces	182,309
Cereals and Pulse	value	651,405
Cigarettes, Foreign	mille	1,275,955
Cigarettes, Japanese	,,	135,810
Dyes, Aniline	value	7,493
Flour	piculs	6,130
Glass, Window	boxes	29,782
Indigo, Liquid, Artificial	piculs	282
Matches, Wood, Large	gross	1,939
Matches, Wood, Small	,,	1,531,937
Needles	mille	529,415
Oil, Kerosene, American	gallons	9,092,406
Oil, Kerosene, Japanese	,,	129,040
Oil, Kerosene, Russian	,,	—
Oil, Kerosene, Sumatra	,,	11,921,061
Paper, printing	piculs	55,983
Railway Sleepers	pieces	194,310
Railway Materials	value	794,033
Seaweed, Japan	piculs	91,924
Silk and Cotton Ribbons	value	30,562
Soap, Laundry	piculs	34,917
Sugar, Brown	,,	289,196
Sugar, White	,,	35,186
Sugar, Refined	,,	511,339
Sugar Candy	,,	78,397
Timber, Beams and Logs, Hardwood	cub. ft.	1,618,994
Timber, Beams and Logs, Softwood	sq. ,,	2,197,937
Timber, Laths	pieces	450
Timber, Piles and Poles	sq. ft.	20,342
Timber, Planks, Softwood	,,	2,538,429
Wine, Champagne	doz qts.	1,421
Wine, Still, Red, or White, in bottles	,,	3,533
Wine, Still, Red, or White, in bulk	gallons	36,478
Wine, Brandy in bottles	doz. qts.	5,781
Beans and Peas	piculs	346,822
Bristles	,,	20,347
Carpets, Tientsin	value	319,724
Cotton Raw	piculs	336,029
Dates, Black	,,	34,354
Dates, Red	,,	66,892
Egg Albumen	,,	3,321
Egg Yolk, Dry	,,	8,817
Egg Yolk, Moist.	,,	933
Eggs, Fresh	thousand	66,375
Feathers, Fancy	catties	30
Feathers, Ordinary	piculs	273
Hemp	,,	39,886
Jute	,,	44,015
Ground-nut Cakes	,,	2,654
Ground-nut Pulps	,,	32,521
Groundnuts	,,	13,437
Hair, Horse Mane	,,	3,928
Hair, Horse Tails	,,	3,021
Hair, Human	,,	3,796
Hides, Cow and Buffalo	,,	13,196
Hides, Horse	,,	13,131
Liquorice Root	,,	45,327
Seeds, Apricot, Almonds, Bitter	,,	13,400
Seeds, Apricot, Almonds, Sweet	,,	8,151
Seeds, Linseed	,,	90,836
Seeds, Rape	,,	106,459
Skins :—Kid Crosses, Black	pieces	70,203
Kid, Crosses, colored	,,	80,218
Lamb Crosses, Kalgan and Mongolian	,,	7,656
Lamb Crosses, Slink	,,	63,527
Lamb Crosses, Thibet	,,	1,747
Sheep Crosses	,,	7,546
Lamb Coats, Shuntefu, Kalgan and Mongolian	,,	4,763
Lamb Coats, Slink	,,	30
Lamb Coats, Thibet	,,	12,185
Marmot Robes	,,	—
Sheep Coats	pieces	2,330
Skin (Fur) Mats, Dog	,,	445,670
Skin (Fur) Rugs, Dog	,,	419
Skin (Fur) Rugs, Goat, Black	,,	140
Skin (Fur) Rugs, Goat, Grey	,,	36,005
Skin (Fur) Rugs, Goat, White	,,	27,416
Skin (Fur) Rugs, Goat, Mixed	,,	17,840
Skin (Fur) Rugs, Sheep	,,	14,359
Fox	,,	22,500
Fox Tails	,,	38,763
Goat, Tanned, Black	,,	77,997
Goat, Tanned, Grey	,,	622,934
Goat, Tanned, White	,,	123,041
Goat, Tanned, Mixed	,,	13,688
Goat, Untanned	,,	2,492,235
Lamb, Shuntefu, Kalgan and Mongolian	,,	77,806
Lamb, Slink	,,	72,620
Lamb, Thibet	,,	83,148
Marmot	,,	322,780
Sheep, Tanned	,,	23,473
Sheep, Untanned	,,	631,458
Weasel	,,	64,765
Straw Braid, Colored	piculs	561
Straw Braid, Mottled	,,	27,671
Straw Braid, White	,,	12,248
Walnuts, Shelled	,,	18,131
Walnuts, Unshelled	,,	23,706
Wool, Camels'	,,	46,351
Wool, Goats'	,,	13,206
Wool, Sheeps'	,,	278,161

TRANSPORTATION FACILITIES.—Tientsin is fortunately situated with reference to railways now in existence, and the advantages of its position will be strengthened by the completion of lines under construction or contemplated. Communication is held with Nanking by the Tientsin-Pukow Railway, which terminates 628 miles distant from Tientsin at Pukow, on the Yangtze opposite Nanking. Here another line begins, the Shanghai-Nanking Railway, which links Nanking and Shanghai The Tientsin-Pukow line is joined at Tsinanfu by the Shantung Railway, which extends through mining and agricultural lands to the port of Tsingtau, and it is through this ice-free port that the territory served by Tientsin receives part of its commerce in the winter when the port of Tientsin is blocked by ice.

Through the line which extends 86 miles to Peking, and which is joined to the long Peking-Hankow Railway by a cutoff just below the Capital, rail communication is held with Hankow This latter line will eventually reach to Canton. Communication is maintained with the railways of South Manchuria, Korea, the Russian lines in North Manchuria and Siberia, and the Trans-Siberian route to Europe.

Regular calls are made at the port of Tientsin by the following steamship lines: The China Navigation Co., with sailings twice a week to Hongkong with calls at Weihaiwei and Chefoo; The Indo-China Steam Navigation Co., with two weekly sailings to Shanghai. The China Merchants Steam Navigation Co., with sailings to Shanghai twice a week; The Kailan Mining Administration's Line, with a sailing every four or five days to Shanghai; The Osaka Shosen Kaisha, with six trips monthly to Kobe and Moji, and three monthly voyages to Keelung,



The Kodak Shop, Tientsin

CARGO ON THE BRITISH BUND, TIENTSIN

Foochow and Takao; The Nippon Yusen Kaisha, with five trips monthly to Moji and Nagasaki, and weekly service to Yokohama and North China ports. In normal times there are frequent calls by vessels in the American and European trade, but calls by large vessels bound for foreign ports have been rare during the period of the war.



CARGO BOATS AT TIENTSIN

PORT FACILITIES.—Facilities for loading and discharging cargo are divided between Tientsin and another port known as Tongku, which is 14 miles below the city.

In the Spring and Autumn vessels drawing 12 feet of water, and during May and June vessels drawing up to about 14 feet, can navigate up to Tientsin. At present the longest ship calling there is 294 feet in length, but contemplated improvements will allow for the swinging of a vessel 310 feet in length. At present vessels of over 300 feet must discharge at Tongku. The whole length of Tientsin Reach is bunded, the British Bund being about 4,600 feet long while the French Bund adjoining it higher up the river has more than 2,000 feet of river frontage bunded with reinforced concrete. Below the British Bund is the bund of the ex-German concession, where there is a wharf 350 feet long where vessels may discharge. On the opposite side of the river are private wharves belonging to Butterfield and Swire, the Peking Syndicate, the Asiatic Petroleum Co., the Tientsin Wharf and Godown Co., and the Chinese Government Railways At Tongku, which is 4.6 nautical miles from the mouth of the Haiho at Taku, there are private wharves described as follows: Chinese Government Railways Upper Wharf, 1,000 feet long with a 30-ton crane; Lower Wharf, 200 feet long. The Kailan Mining Administration wharf, 1,000 feet long. The China Merchants Steam Navigation Co. Wharf, 960 feet long, and the Upper Wharf with pontoons 1,000 feet long. A Japanese wharf, 800 feet in length, and a German wharf, about 1,000 feet long.

THE TAKU BAR.—The distance from the outer entrance of the channel across Taku Bar to the mouth of the river at the North Fort is 5.5 nautical miles; the distance from the inside of the bar to the river entrance is 3.5 nautical miles. The distances from North Fort are as follows:

To Tongku Customs Station ...	... 4.2 naut. miles
Tongku Railway Station ...	... 4.6
Hsinho Railway Wharf ...	... 7.0
Tientsin-Pukow Railway Wharf	... 32.5
Tientsin Harbormaster's Office	... 36.0

TAKU ANCHORAGE.—Vessels of 24 feet draft may lie nearly in their own draft of water about 8½ miles from the Forts, as the mud is so soft that they can ground at low water.

TIDES.—The "average" depth of water available at high water for vessels to cross the bar during 1912 was about 12 feet, but dredging operations are now being carried out in an effort to increase the depth to 16 feet, or 8 feet at L.W.O.S.T. The depth available up to Tientsin will then be approximately 14 feet. a vessel crossing the bar at high water taking the tide with her all the way up. The river is considered as being closed by ice from about December 15th to the end of February, but ice breakers are used in an effort to keep a passage open to Tongku.

Vessels lying at the Taku anchorage discharge into steel lighters of from 100 to 800 tons, owned by the Tientsin Lighter Co., the Taku Tug and Lighter Co., the China Merchants Steam Navigation Co., and the Establishment de Tongku. Passengers usually disembark at Tongku, while cargo is unloaded either at Tongku or Tientsin wharves.

DRY DOCKS.—The Tientsin Lighter Co. has at Tongku a dry dock 542 feet long on bottom and 50 feet wide at entrance. The Societe des Etablissements de Tongku owns a dry dock 260 feet in length, 50 feet wide at the entrance and 9 feet deep on the sill.

PILOTAGE.—Not compulsory but advisable.

Tientsin Conservancy

A reference to the Customs Annual Tientsin Trade Report, 1917, will indicate that the navigability of the Taku Bar suffered severely by the great floods of 1917. It appears that some 15,000 square miles of the most populous part of the Chihli province between Paotingfu and Tientsin were inundated, and it is calculated that crops to the value of $100,000,000 were totally destroyed. "The conservation of the intricate waterways of the Chihli province has been discussed from time to time and," according to the Report referred to above, "various conservancy engineers have individually issued reports on the subject, but no co-ordinated scheme on broad lines and acceptable to all interests has hitherto been adopted. Last autumn, however, a proposal was brought forward by the Commissioner of Customs, in connection with the appointment of a joint Commission composed of representatives of the Chinese Government and of the Haiho Conservancy Board, etc., to study the general question and submit recommendations for the consideration and acceptance of the Government." As is now well known the joint Commission thus proposed by Mr. Maze was duly appointed by the Chinese Government last March. H. E. Hsiung Hsi-ling has been made president and the board is composed of the following six gentlemen: Admiral Wu Yu-ling, Mr. Yang Pao-ling, Mr. van der Veen, Mr. Pincione, Mr. von Heidenstam and Captain Tyler It is understood that the immediate functions of the Commission will be devoted to a detailed survey of the province, after which what has been called the Grand Scheme for the improvement of the Chihli River System will be formulated. There can be no two opinions about the usefulness of a strong Commission like this and the Chinese authorities are to be heartily congratulated upon their far-seeing and progressive action in appointing it. The general trade of Tientsin and North China has suffered much from floods in the past and any measures calculated to remove this menace in the future deserves strong support. It would also appear that the interests of the Haiho Conservancy will be directly safeguarded by placing the control of the waterways of the hinterland in the hands of an authoritative committee composed of foreign engineers of repute. As already mentioned the floods caused the Taku Bar to shoal heavily last year and despite continuous dredging throughout the year the Harbor authorities found it necessary to issue the following statement last November for the information of shipping:

> At a recent meeting of the Haiho Conservancy Board it was decided, in consultation with the Harbor authorities, that it would not be possible to make provision for effective ice-breaking operations this winter owing to the unfavorable conditions still prevailing on Taku Bar. It appears that the floods of 1917 caused about 1,000,000 cubic yards of silt to



TONGKU

deposit in the Bar Channel on a width of about 500 feet reducing the depth —9.3 ft. T. D. to —2.5 ft. T. D.

Notwithstanding the fact that dredging operations were prosecuted throughout the year continuously it is improbable that more than 11 feet of water will be found on the Bar before next spring. In such circumstances the ice-breakers could function for a few hours only each tide, or not long enough to keep the approaches to the River free of ice. The abandonment of ice-breaking for this season means the virtual closing of the port, but the Commissioner of Customs has informed the consular body, etc., that should steamers elect to visit Tientsin in these conditions and before the port is actually closed, the ice-breakers will render such assistance as may be possible, consistent with safety. It is understood, moreover, that the so-called unofficial channel, to the southward of the official channel, is more suitable for the time being than the latter, and, this being so, the Customs authorities are making provisional arrangements to light it.

Owing to the fact that it has been found impossible to keep the approaches of the river free of ice this winter owing to the shallowness of the Bar the majority of the cargo imported or shipped will follow the Chinwangtao route, and a shortage of available freight-cars is likely to occasion much inconvenience.

MERCHANTS.—American Machinery & Export Co.: Andersen, Meyer & Co., Ltd.; Anglo-Chinese Trading Co.; The Barkley Co., Inc. (U.S.A.); Butterfield & Swire (John Swire & Sons, Ltd.); Chandless & Co.; The China American Trading Co., Inc.; China Strawbraid Co.; Collins & Co.; Geo. Croft & Co.; The Robert Dollar Co.; The Eastern Trading Co., Ltd.; F. A. Fairchild; Fearon, Daniel & Co., Inc.; William Forbes & Co.; E. W. Frazar; H. and W. Greer, Ltd.; Ralph Harper & Co.; Hatch, Carter & Co.; Jardine, Matheson & Co., Ltd.; Liddell Bros. & Co.; MacAndrews & Forbes Co.; Mackenzie & Co., Ltd.; Mitsui Bussan Kaisha; Mustard & Co.; Olivier & Cie; Perrin-Cooper & Co.; Racine, Ackermann & Cie; Reiss & Co.; Shewan, Tomes & Co.; J. Twyford & Co.; Wilson & Co.

Chinwangtao

Chinwangtao, in Chihli Province, is situated on the west coast of the Gulf of Liaotung, in lat. 35 deg. 55 min. N. by long 119 deg. 38 min. E., and is 122 miles northeast of Taku, the port of Tientsin. Chinwangtao was made a treaty port by a voluntary decree in 1898, and the Customs station was opened there in 1901. The port was established for the winter use of Peking and Tientsin, as well as for the mines which were then being developed in the neighborhood, and which have now become of great importance. Another reason for the selection of the site for a seaport was the nearness of the Peking-Moukden line at this point. While Chinwangtao was originally connected with the Peking-Moukden Railway by a short branch, the line has now been diverted from its original course and passes through the city, the new main line being opened on September 1, 1916.

Preparatory work on the harbor was started in 1899, and in 1902 a breakwater having on its inner face berthing space for five vessels, and a pier designed to accommodate two vessels on either side, had been constructed.

Chinwangtao now ranks as the premier port east of Suez for the shipment of coal, its export being larger than any one port in Japan and three times that of Hongay, in Tonkin. Twelve thousand tons of coal can be handled in 24 hours with the facilities of the port. Coal and cement come from the mines of the Kailan Mining Administration, which are situated on the main line of the Peking-Moukden Railway between Tientsin and Chinwangtao. Exports of coal in 1917 totalled 1,318,632 tons, 695,526 tons of which went to foreign countries (over half of this quantity going to Japan and the remainder to Hongkong, the Philippines and Korea). Shanghai took 567,946 tons, while the remainder was distributed among 17 other Chinese ports.

Price inducements for bunker coal frequently attract steamers to call at the port rather than at Moji, Japan.

Chinwangtao is not of great importance commercially otherwise than for its exports of mine products. Its population is only about 5,000. It was first used as a landing place for Government mails, in 1897, in winter when the port of Tientsin (Taku) was frozen over, the mails being carried to Tangho on the Peking-Moukden line by cart, and as a port for the mines on the Tientsin-Moukden Railway, which at that time stopped at the Great Wall, at Shanhaikwan, 175 miles above Tientsin, and passed Chinwangtao some 5 miles from the sea. As mentioned in the foregoing, the Peking-Moukden line was diverted in 1916 on the stretch of 22 miles between Peitaiho to Shanhaikwan to a course nearer the seacoast, touching Chinwangtao.

Work on the harbor was begun in 1899, and much progress had been made in the first half of 1900. The Boxer uprising ensued, and in July, 1900, a party of 30 or 40 local Boxers, who had been initiated in the rites by the Boxer brotherhood of Manchuria, arrived in Chinwangtao and stopped the operations on the harbor by forcing the one foreigner there, the engineer engaged in surveying the proposed works, to flee for his life. About a month later the landing of a French force in the neighborhood was effected, and French troops dispersed the party of Boxers by a single shot. In October, 1900, mechanics and materials for building the pier, which was intended for military purposes in the event of a fresh Boxer outbreak during the winter of 1900-01, were sent to Chinwangtao by ship. The pier was first used in the winter of 1901-02. In 1901 the pier and breakwater were connected by rail to the Tangho station on the Peking-Moukden Railway.

The trade of the port was, at first, limited to the export of coal and the importation of military stores for the foreign corps of occupation. Its main object was attained in the prompt despatch of mails to and from Shanghai and Peking during the closed season of Tientsin.

A revival of import and export trade is looked for with the return of normal conditions, as Chinwangtao is practically the only port on the Gulfs of Pechili and Liaotung accessible during the winter, and it possesses advantages the year through not held by rival ports.

Coal, of course, constitutes about 90 per cent. of the exports.

COMMERCE AND INDUSTRY.—Exports from Chinwangtao consist mainly of coal, fire brick, fireclay and cement. The value of the total exports in 1917 was Tls. 6,322,746, details of which are given below:—

Article.	Unit.	1915	1916	1917
Cement	piculs	326,421	241,124	444,712
Coal, Kailan	tons	1,190,937	1,204,778	1,318,632
Coal, Kailan for steamers use	,,	104,184	112,735	123,833
Coal, Liukiang	,,	—	—	6,120
Coke	,,	12,206	17,451	30,951
Firebricks	pieces	2,551,212	4,434,997	5,105,185
Fireclay	tons	480	745	1,625
Peanuts	piculs	33,462	3,752	355
Pears, fresh	,,	3,212	5,584	395
Samshu (native spirits)	,,	989	53	675
Silk, raw white	,,	54	57	10
Silk, raw yellow	,,	61	36	30
Silk cocoons, refuse	,,	477	443	121
Skin (Fur) Mats, Dog	pieces	56,695	0	300
Stone, flint	piculs	0	0	2
Scrap iron	,,	0	0	172
Iron manufactures	,,	0	0	153

Imports of foreign goods in 1917 amounted to Tls. 2,688,560 and imports of Chinese goods totalled 1,344,423. Most of the foreign imports consisted of supplies for the mines in the neighborhood of the port.

The imports were divided among foreign countries as follows: United States Tls. 691,921 (chiefly kerosene oil, cigarettes, explosives for industrial purposes, and machinery); Japan, Tls. 293,041 (wood poles, railway sleepers and carriages, cigarettes and timber); Hongkong, Tls. 209,692 (sugar, rice and building materials); Great Britain, Tls. 151,337 (machinery, cigarettes, railway carriages and electrical materials); Canada, Tls. 65,020 (cigarettes).

The value of the import and export trade at Chinwangtao from the year 1908 until 1917 is given below (in Taels):—

Year	Imports from Foreign Countries	Imports from Chinese Ports	Exports to Foreign Countries	Exports to Chinese Ports	Total
1908	2,268,088	2,419,625	82,948	1,889,577	6,660,238
1909	2,336,268	4,615,303	625,447	2,386,950	9,963,968
1910	2,547,612	6,038,683	763,571	2,474,146	11,824,012
1911	1,769,170	4,875,855	873,726	2,498,582	10,017,333
1912	2,336,829	3,369,689	1,099,706	2,572,994	9,379,218
1913	3,562,743	3,280,956	1,604,887	2,670,818	11,119,403
1914	3,196,295	2,535,107	3,166,022	3,655,973	12,553,397
1915	1,803,403	3,059,144	2,327,144	3,514,971	10,704,662
1916	1,308,660	2,442,830	1,907,110	3,605,316	9,463,916
1917	1,415,920	2,637,177	2,826,966	3,495,760	10,375,843

In 1917 1,215 ships with a tonnage of 1,552,938 entered and cleared at the port. American Army transports made 22 trips to and from Manila, carrying away coal and cement for Government use and bringing military stores for Tientsin and Peking. In the summer a camp was established here for quartering American troops from Tientsin and Peking. Contingents of 400 to 500 men succeeded one another during the hot months, and the camp was closed in the Autumn.

HARBOR FACILITIES.—The harbor is formed by a breakwater 2,300 feet long and a pier 1,600 feet in length. The entrance to the harbor is 930 feet in width. The depth alongside the breakwater varies from 18 to 21 feet at low water. The approaches to the harbor have a depth of 22 feet, gradually shoaling to 19 feet 6 inches at the entrance but improvements are under way. The bottom is sand; there are no rocks. The harbor freezes in hard winters, but in average years the ice difficulty can be easily surmounted.

The loading and discharging facilities are excellent. There is every facility for handling weights up to 15 tons on the wharves. Covered storage accommodating 7,000 tons of cargo is available. Cargo is discharged directly into railway cars alongside steamers and can be taken by rail to any station in North China without further handling. Through bills of lading to Tientsin can be obtained, when cargo is taken direct to that port by rail and passes Customs examination at destination.

Steamers calling at Chinwangtao for bunker coal only are exempt from all port dues and wharfage charges.

Pilotage is unnecessary, but the wharfmaster of the Mining Administration will, if desired, bring steamers alongside free of charge. There are facilities for ordinary repairs. Fresh water is obtainable at a moderate charge.

The port rules are as usual. A tariff of charges and a list of regulations may be obtained at any office of the Kailan Mining Administration.

Manchuria

Manchuria is the foreign name for the northeast section of China, which comprises the three Provinces of Kirin, Shengking and Heilungkiang. The Manchurian territory is bounded on the west by the Chinese Province of Chihli, by Mongolia, and by the Russian territory of Siberia; on the north wholly by Siberia; on the east by Siberia and the Japanese territory of Korea; and its southern border is formed partly by Korea, the Yellow Sea, and the Gulf of Liaotung, with a neck of land known as the Liaotung Peninsula jutting into the two bodies of water.

The Chinese Customs estimates the population of the Manchurian Provinces at 19,200,000; other authorities estimate it at 12 to 14 millions. The area of Manchuria is estimated at 363,700 square miles. Shengking (otherwise known as Fengtien) Province is the most southerly of the three, mountainous in its eastern portion but elsewhere a level country denuded of forests. Shengking contains the leased Japanese territory of the Liaotung Peninsula, and its main port is Dairen at the Peninsula's southern extremity. Its other important ports are Newchwang, on the Gulf of Liaotung, which is under Chinese control, and Antung, on the Manchurian-Korean border.

About three-fourths of the foreign trade of Manchuria pass through the ports of Shengking Province; the remainder of the trade is largely overland through Siberia, with a fair quantity overland from other Chinese provinces.

Kirin, the central province, is the richest and most populous. In the east are heavily wooded mountains and undeveloped mineral resources of high potential value. This district also produces many fine wild-animal furs. The western and central sections are agricultural areas which produce soya beans, the staple crop of Manchuria, as well as staple grains and tobacco. Its important cities are Changchun, Harbin, Kirin, Sansing and Suifenho. The last named is the eastern terminus on Chinese soil of the Chinese Eastern Railway which here crosses the Manchurian-Siberian border and proceeds to Vladivostock Suifenho at the eastern and Manchouli at the western terminus of the Chinese Eastern Railway are the two ports at which the bulk of the trade to and from Siberia pass the joint Chinese and Russian customs stations.

Heilungkiang, the third and largest of the three provinces, contains about half the total area of Manchuria. It is sparsely populated and has few cities. Its northern border is the Amur River, which separates it from Siberia. The development of Heilungkiang rests largely upon future railway construction and on the future of Siberia. At present the Chinese Customs maintains a station on the Amur at Aigun, and a railway is projected to connect Aigun with the Chinese Eastern Railway at Tsitsihar. Aigun is the entrepot for the Russian city of Blagovestchensk, on the opposite bank, which in turn is the trading centre for a large Siberian territory. The important towns in Heilungkiang are Tsitsihar, its capital, with which the proposed line to Aigun would connect, and Mergen, Khailar and Manchouli. As mentioned above, Manchouli is the western entrepot of the Chinese Eastern Railway, and is the site of the joint Customs station. In the west and northeast the territory is mountainous, but most of it consists of plains on which are grown wheat and other grains, although most of the level area is impregnated with salt and soda and is therefore infertile.

The most valuable crop of Manchuria is the soya bean, of which vast quantities have been exported in late years The southeast produces cultivated and wild silk. The most important mineral now being mined is coal, the largest mines being those at Fushun.* the property of the Japanese South Manchuria Railway. It is believed that the mountains are rich in gold. iron and other minerals. Precious stones are obtained in fair amounts. Hardwoods in the mountains of Kirin are abundant, but must await the development of railways; at present the Yalu River, which divides Korea and Manchuria, is the principal means of transporting the forest products, and the river port of Antung is the natural outlet through its location at the junction of the South Manchuria and Korean railways. The rivers are well stocked with salmon and other fish. Cattle, horses and swine are raised in considerable numbers.

The Manchurian ports, with the exception of Dairen, at the southern extremity of the Liaotung Peninsula and in Japanese leased territory, generally become frozen over for four months in the winter. The Manchurian rivers are also frozen during the cold season. The bordering and inland rivers in Manchuria are much used in internal transportation during the summer. The important streams are the Amur, the Sungari, the Yalu and the Liao. All these are navigable by river steamers and junks for long distances. However, the development of Manchuria waited upon railways.

The Russians were the first railway builders in Manchuria. In 1896 the Russo-Chinese Bank, which had been founded the year before to develop Russian interests in the Far East, secured a concession for a railway across northern Manchuria that would form a short connecting link between the Trans-Siberian Route, then constructed up to a point in the Trans-Baikal region, and Vladivostock. The line was built across Manchuria, with its terminii on Chinese soil at Manchouli on the west and Suifenho on the east, and became known as the Chinese Eastern Railway. In 1898 the Russians obtained a lease on the Liaotung Peninsula and the right of constructing a railway to Dalny (otherwise Dairen) and Port Arthur, the two ports at the southern extremity of the Peninsula. In 1898 construction of this link from Harbin, on the Sungari, was begun and the line from Harbin to Dairen by way of Changchun was opened to through traffic in 1901. The Chinese Eastern Railway was of 5-foot gauge throughout, as originally constructed. When the Russo-Japanese War came about in 1904 the Japanese seized the Chinese Eastern Railway and reduced the gauge to the standard of the Japanese Railways (3 feet 6 inches) to make possible the use of their own rolling stock. By the Portsmouth Convention the Japanese took over that part of the Harbin-Port Arthur line of the Chinese Eastern Railway between Port Arthur and Changchun, and converted it to the gauge of 4 feet 8½ inches. At the present time the Japanese are in possession of the leased territory of the Liaotung Peninsula formerly held by the Russians and of the Chinese Eastern Railway from Port Arthur and Dairen to Changchun. The Russians hold the rest of the Chinese Eastern Railways, including the branch from Harbin to Changchun. The Russian lines in Manchuria are of 5-foot gauge while the Japanese lines and the Chinese lines are of 4-foot 8½-inch gauge. Under their treaties with China both the Chinese Eastern Railway and the Japanese lines have control

* See FAR EASTERN REVIEW, July, 1918, for full illustrated description of mines.

of their "railway zones" and at each station hold concessions where there are troops acting as railway guards. There is a Chinese line extending from Tientsin and running along the coast by way of Chinwangtao and parallelling the Manchurian border to a point opposite Moukden, with branches from Shanhaikwan to Moukden and from Koupangtze to the Chinese port of Newchwang. In addition the Chinese have a short line from Changchun in an easterly direction to Kirin, which it is proposed eventually to construct to Hweining, on the Manchurian-Korean border, and one running westwards from Shihpingkai to Changchiatung. The mileage in Manchuria now under operation is as follows:

	Miles
Chinese Eastern Railway (Russian):	
Manchouli-Harbin-Suifenho (5-ft. gauge)	926
Harbin-Changchun (5-ft. gauge)	152
Anganki-Tsitsihar (3.28-ft. gauge)	17
Total	1,095
South Manchuria Railway (Japanese):	
Changchun-Dairen	437.5
Moukden-Antung	170.1
Tashihchiao-Newchwang	13.9
Sushiatun-Fushun	34.7
Choushuitzu-Port Arthur	31.6
Total (4-ft. 8½-in. gauge)	687.8
Chinese Railways:	
Shanhaikwan-Moukden	40
Koupangtze-Newchwang	59
Changchun-Kirin	80
Shihpingkai-Chengchiatun	53
Total (4-ft. 8½-in. gauge)	232

The total of these three systems is 2,014 miles, giving to Manchuria the highest proportion of railways to area and population in all China. In addition, lines totalling some 3,500 miles are proposed in the near future.

The South Manchuria Railway Company† operates the Japanese lines in Manchuria as well as the short line to Kirin and the railways in Korea (Chosen). The Company was organized in 1906 with a capital of Yen 200,000,000, or $99,600,000 in gold. Of this the Japanese Government owns half, and on the remainder has guaranteed a dividend of 6 per cent. annually for 15 years. The shareholders are limited by law to the governments of Japan and China and their subjects.

The South Manchuria Railway operates freight cars of 30 to 50 tons capacity, of the American type, and heavy passenger car equipment also of American pattern. In addition the South Manchuria Railway Company has embarked in other enterprises, including shipping, harbor works, coal mining, electric power and street railway traction, gas plants, hotels, administration of its railway zone, experimental laboratories, hospitals, schools and libraries, waterworks, experimental and instruction farms, and lately into sheep raising.

The Company owns fast passenger and mail steamers which run from Shanghai to Dairen in 1¾ days and connect with the express-train service to Changchun, where a change is made to the Russian lines for Moscow and beyond. The railway controls wharf and warehouse services at Dairen. At Fushun the Company operates large coal mines for its own uses, and sells and exports coal. It also owns and operates five modern hotels at Dairen, Port Arthur, Moukden, Changchun, and at a summer resort known as Star Beach, 5 miles from Dairen, and contemplates the construction of others. Its original freight tariff provided a protective rail rate through Dairen as against Newchwang, with the object of building up Japanese trade, and under it rebates were publicly given to large shippers. In 1909 the tariff to interior points was made the same from either Newchwang, Dairen or Antung, although Newchwang is much the nearest. Through rates from the ports are somewhat lower than internal rates. The new tariff is reported to have abolished the rebates

† See FAR EASTERN REVIEW, April, 1918, for full illustrated descriptions.

Hulutao

The little known harbor of Hulutao, which is not yet developed into a commercial port, has political as well as commercial possibilities which might prove of consequence to North China at no distant date. Already considerable work has been done there—but abandoned for some years—with a view to improving its facilities as a harbor, and the projected extension of railways in Manchuria and Inner Mongolia, combined with the cessation of the war and the probable termination of internal troubles in China, will no doubt permit of the conclusion of the improvements now suspended. It is believed by many that Japan hopes to make use of the port as the sea terminal of a line projected to connect with the proposed railway between Taonanfu and Jehol, in which case its importance as a competitor with Dalny will be greatly minimised.

The natural advantages and possibilities of Hulutao as a harbor for the accommodation of ocean-going steamers and a shipping centre for a rich and extensive hinterland can be appreciated by a glance at the map showing the existing and projected railways in China published in this issue.

Hulutao is situated on the coast about 110 miles north of Chinwangtao, and is connected by a branch line with the Peking-Moukden Railway at Lienshan, which station is some seven and a half miles distant. It is 31 miles from Chinchow, and, taking Moukden as a centre the distance to Hulutao is 184.16 miles, while the present line from Moukden to the seaport of Dalny is 246.7 miles, an advantage in favor of Hulutao of 62½ miles shorter for freighting purposes, and correspondingly an increased advantage for every point from Moukden to Lienshan. Hsinminfu is 37 miles from Moukden or 147 miles from Hulutao, and 283 miles from Dalny, so that cargo going to Hulutao from Hsinminfu district would have 136 miles shorter distance to be carried in order to reach the sea for shipment than if it went via Dalny. The distance from Moukden to Chinwangtao is 30 miles further than from Moukden to Dalny. The distance from Moukden to Yinkow by the South Manchuria Railway is 112 miles, or 72 miles nearer than to Hulutao, but the distance by the Chinese railway is only 20 miles nearer. Yingkow, however, has the disadvantage of being frozen four months in the year, from November to March, so that no ships can enter during that period, and it is then useless as a port. The distance from Hulutao to Taonanfu is about 290 miles, and this section of the country abounds in coal mines of excellent quality notably at Peipiao, 55 miles distant, and at Tayaokou, 70 miles. Hsinhiu, near Hsinminfu, has also excellent mines, and no doubt they will eventualy be opened by modern methods and will bring much traffic to Hulutao. The development of local traffic when the Taonanfu railway is built will also be considerable, for it will be followed by the settlement of all available parts of the country it passes through and will bring great quantities of cereal and mineral products within reach of shipment by sea via Hulutao which is the natural outlet by sea from Manchuria and Inner Mongolia.

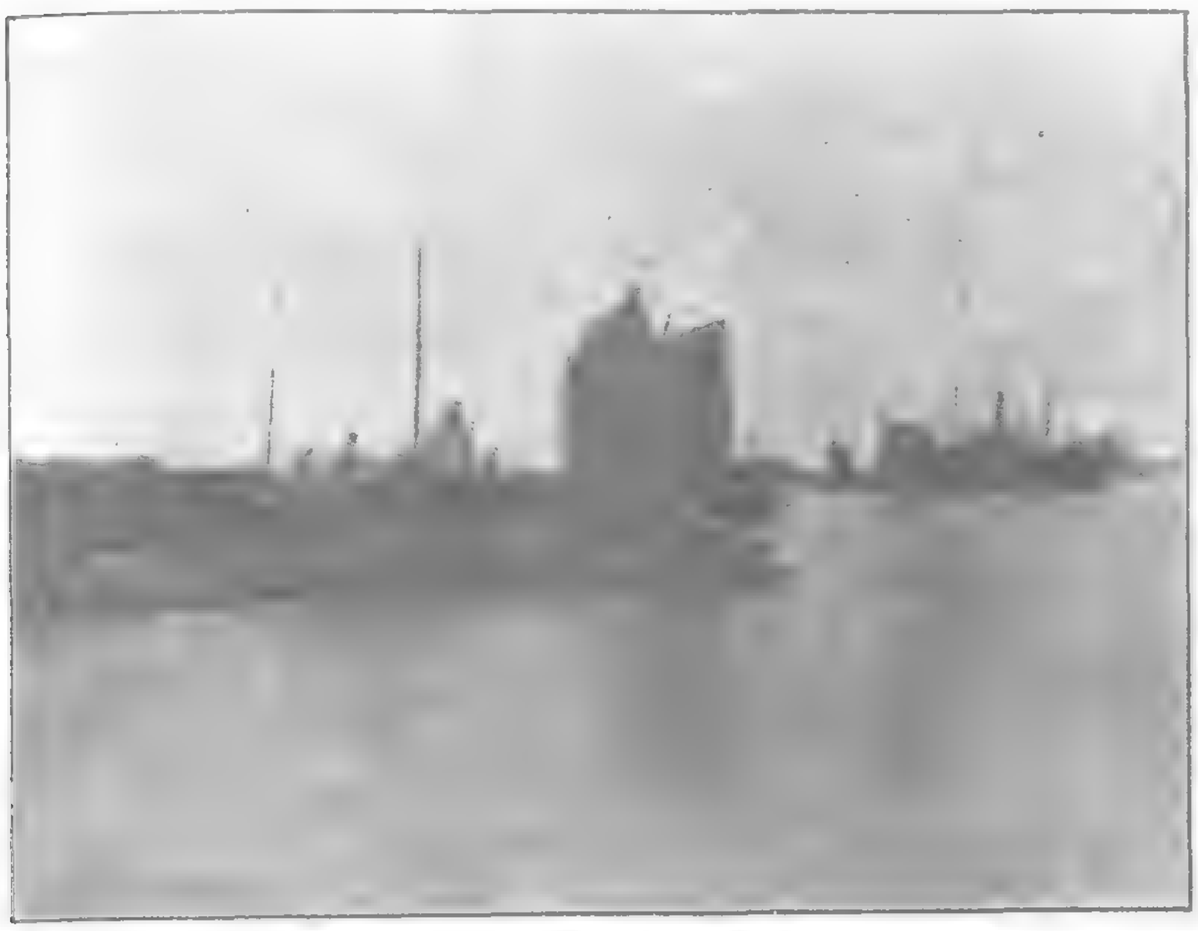
As well as being favorably situated as a seaport Hulutao has the advantage of a good natural depth of water giving 30 feet at low tide, where the end berths of the projected breakwater will be situated if the project which has been devised is carried out.

A sum of $1,028,850 was spent on improvement works at Hulutao in 1910, when work was suspended owing to the outbreak of revolution, and has not since been resumed. When work was suspended a breakwater had been considerably advanced, railway connection had been effected with the Peking-Moukden Railway at Lienshan station, and a hotel and other accommodation had been erected. A full illustrated description of this work will be found in the FAR EASTERN REVIEW of July, 1914.

Newchwang

Newchwang is the natural gateway to Manchuria, and until the Japanese gained control of the Liaotung Peninsula and developed Dairen, Newchwang was the principal port for the Manchurian Provinces. Although the natural increase that would have come to Newchwang has been taken by Dairen, the older port is still an important trading centre.

The city is in lat. 40 deg. 40 min. N., long. 122 deg. 15 min. E., is on the left bank of the Liao River, at the northern end of the Liaotung Peninsula, some 13 miles above the point where the Liao stream empties into the Liaotung Gulf. The correct name for Newchwang is Yingkow. "Newchwang" was one of the ports



THE LIAO RIVER, NEWCHWANG

opened to trade by the Anglo-Chinese treaty of June 26th, 1858, but on investigation the town of that name was found about 50 miles up the river at a point inaccessible to ocean-going steamers. The first consul selected Yingkow as the site for the port of "Newchwang," and Yingkow has come to be known by that name. The Maritime Customs station was founded there in May, 1864.

The climate of Newchwang is excellent, with comparatively cool summers and dry, bracing winters, the temperature ranging from about 85 degrees F. in summer to 10 or 15 degrees below zero in winter.

At Newchwang there is a river frontage of 2,500 feet. Any ship that can pass the bar at the mouth of the river can come alongside the wharves. At present the clearance is 18 to 20 feet at high tide, and dredging operations in active progress now will enlarge this to 26 feet at low tide. Most of the beans shipped at Newchwang come down the Liao River in junks. A few years ago traffic was seriously menaced by the fact that the Liao broke through its banks some miles upstream and sought a new way to the Gulf, thus tending to reduce the importance of Newchwang, but this was rectified by the erection of a stone weir.

Formerly Newchwang handled almost the entire trade of Manchuria. Cotton goods and other merchandise were shipped in before the closing of the port by ice in November, and when the roads became packed hard these goods were shipped to interior ports in thousands of Manchu two-wheeled carts, each drawn by seven ponies. The junks which brought down beans also carried back some of the merchandise. With the development of the railways this traffic gradually disappeared, until at the present time only a few score of the ancient carts are in use. Newchwang is closed by ice usually from the latter part of November until about the middle of March. During the open season mail and passengers from China come by rail from Tientsin or Chinwangtao to the railway station on the right bank of the Liao and are ferried across, but when the stream is closed by ice there is little traffic this way and Newchwang is supplied through Moukden or Dairen. Newchwang is 137 miles nearer by rail to Moukden and other interior points than Dairen, although the freight rates quoted by the South Manchuria Railway are the same from both ports.

The Chinese Government railways offer daily communication with Tientsin, Peking and Moukden, with a branch line from Newchwang to Koupangtze, and the South Manchuria Railway by a branch line from Tashihchiao maintains daily communication with Dairen, Changchun, Port Arthur, and Moukden. Travelers for Russia and Europe may easily reach Changchun by rail from Newchwang, and at Changchun change to the Chinese Eastern Railway.

The population of Newchwang is estimated at 61,000. The town was formerly under the jurisdiction of Shantung Province. It was largely settled by Shantung people, and their language is still used there. The trade is almost entirely in the hands of Shantung men and their descendants. Thousands of Shantung coolies come from Chefoo to Manchuria through Newchwang every year to aid in the sowing and harvesting of the bean and other crops. These coolies come in bands to the fairs in the hundreds of market villages and offer themselves for hire, at wages of 4 to 8 silver dollars a month.

Steamship service to Shanghai, Chinwangtao, Tientsin, Kobe, Nagasaki, and to Yokohama by way of Dairen, Chemulpo (a Korean port) and Tientsin, is frequent and regular, although Newchwang has felt a lack of tonnage in the years of the European War.

The chief products of the place are agricultural—beans, millet, maize, beancake, bean oil, and native wine, with a fair amount of bristles, ginseng, wild and refuse silk, and skins and furs. Another article of export is coal from the Fushun collieries, as the South Manchuria Railway finds that its coal may be laid down cheaper at Newchwang than at Dairen. The greater part of the export trade is done through Japan, although some direct shipments of beans and beancake have been made to Europe.

The South Manchuria Railway has founded here a modern hospital with a chair of dentistry. The port has electric lights, waterworks, and a telephone system, these facilities being controlled by a joint Chinese and Japanese concern. There are two divisions of Newchwang, the New Town and Old Town. The New Town is under the control of a Japanese municipality.

In the Commissioner of Customs' report on the trade of Newchwang in 1917, the following statements throw much light on the present status of the port and its possible development:

"While the result of the year's working, taken as they stand, do not make for optimism with regard to the future, it may be well briefly to analyze the situation before hastily assuming that Newchwang, as has been freely stated, is a moribund port. Newchwang has been handicapped during recent years by the growth of two powerful competitors—Antung and Dairen. The former port is on the direct route between the most important Manchurian markets and the great centres of manufacture and consumption of raw materials in Japan, and the latter, owing to government encouragement, has the monopoly of most of the Japanese tonnage in these waters in addition to being an ice-free port. Both ports also enjoy certain advantages owing to preferential rates on through cargo to and from Japan, which rates are not extended to cargo sent via Newchwang. While the war lasts the country is in the most favorable position to supply the bulk of the imports to the Manchurian Provinces and one of the largest buyers of their native products is Japan, and for the above reasons there is little inducement to those connected with this trade to send their goods through the channel of this port. Non-Japanese trade is also diverted, owing to the lack of tonnage visiting this port; hence it seems that no improvement can be looked for in the business of Newchwang until the cessation of hostilities and the release of shipping for return to its normal activities. While a large percentage of the purely Japanese trade will probably continue to use the other Manchurian ports, it seems likely that with renewed competition after the war this trade will be, to a certain extent, redistributed, and there is no reason why this port, even without the assistance of the Japanese trade, should not regain much, if not all, of its former importance. The export of minerals which, before it was practically stopped by lack of tonnage, formed an important branch of the exports from Newchwang to Japan and Chinese ports, is certain to be resumed on even a greater scale. How important the outlet through Newchwang is to the Japanese interests which control the mines may be gauged from the fact that Fushun coal can be laid down in Japan 90 sen cheaper when shipped viâ Newchwang than when sent through Dairen. The mainstay of Manchurian trade is, however, agriculture, principally beans, and the area under cultivation is continually increasing. It has been estimated that the annual bean crop of the three Manchurian provinces has grown in the last 20 years from 9,000,000 to 30,000,000 piculs. . . . With the channels of trade reopened between Manchuria and the European and American markets after the war by a sufficiency of tonnage being provided, there seems every reason to warrant the assumption that Newchwang, as in former years

will be the outlet of at least a good portion of the surplus production of these provinces and the inlet for much of their foreign necessaries. While local shipping facilities have much improved, thanks to the good work done by the Liao River Conservancy, it is to be regretted that the Peking-Moukden Railway has not yet seen its way to give at least as good a service



THE LIAO RIVER AT NEWCHWANG

between this port and the main line at Kowpangtze as the South Manchuria Railway offers on its branch line to Tashihkiao. The latter line, though its terminus is situated on the same side of the river as the town, has a commodious receiving establishment in the native town and accepts responsibility for all goods entrusted to its care; it has a good and adequate supply of rolling stock and provides tarpaulin covers for open wagons; freight by this line is also exempt from taxation and examination. The Yingkow (Chinese) Railway station is on the north bank of the river and no cargo is accepted unless brought to the station. . . . No responsibility is taken for goods and this, together with the possible delays en route, make it advisable that agents accompany their cargo. The passenger cars are old, badly kept, and insufficient; and the train service, consisting of two trains leaving in the morning and returning in the evening, is slow and unpunctual. Since this section is remunerative there seems no reason why improvements should not be introduced."

COMMERCE AND INDUSTRY.—The total figures of imports and exports from 1914 to 1917 are given below, in terms of Haikwan Taels:

	1914	1915	1916	1917
Net foreign imports	13,553,219	10,515,210	9,209,670	9,936,394
Net Chinese imports	7,624,762	9,486,496	8,171,996	8,079,228
Net total exports	16,217,549	20,393,833	14,097,490	10,813,877
Grand total	37,395,530	40,395,539	31,479,156	28,829,499

The total combined import and export trade reached its highest point in 1911, with Tls. 58,213,740. In the next two years it stood at Tls. 50,000,000, and from the foregoing table it will be observed that there has since been a steady decline.

IMPORTS.—Imports are of the variety usually described as "sundry." Piecegoods, as usual, form the largest single group.

EXPORTS.—Some of the principal exports, with their quantities from 1913 to 1917, are given below:

Article	Unit	1913	1914	1915	1916	1917
METALS AND MINERALS.						
Iron, Pig and Unmanufactured ...	piculs	—	—	311,212	269,803	90,094
Iron, Manufactures	Value, Hk. Tls.	114	16	97	115	2,925
Lead	piculs	17	—	13	179	2
Tin Compound ...	,,	—	—	—	—	873
Ores, Unclassed ...	,,	172	—	—	—	40
SUNDRIES.						
Beancake	piculs	4,228,905	3,186,825	4,086,022	2,911,335	2,266,908
Beans, Black ...	,,	236,725	147,820	237,731	274,855	91,029
,, Green ...	,,	179,250	207,553	266,079	276,158	100,146
,, ,, Small	,,	59,031	24,937	48,428	17,607	23,746
,, Red ...	,,	576	208	763	579	835
,, White ...	,,	32,602	30,204	35,193	23,747	23,814
,, Yellow ...	,,	854,108	819,063	1,423,831	890,636	375,434
Bones, Cow and Refuse	,,	4,664	4,291	3,166	3,613	6,259
Bristles	,,	1,849	3,332	3,150	2,243	2,592
Cereals :—						
Barley, Pearl ...	piculs	711	1,565	1,504	1,867	1,062
Kaoliang (Sorghum)	,,	447,830	58,339	114,308	24,554	102,315
Maize	,,	61,603	22,426	69,734	35,608	50,161
Millet	,,	98,017	84,086	45,463	8,368	24,765
Wheat	,,	14	—	5,224	44,429	3,386
SUNDRIES.						
Coal	tons	307,461	337,510	261,781	83,246	31,008
Fish, Dried & Salt	piculs	2,370	2,027	2,566	3,046	2,440
Ginseng Beard & Refuse ...	,,	623	645	851	523	215
,, Chinese	,,	1,670	1,406	1,775	2,436	3,889
,, Wild ...	catties	615	328	906	613	459
Hair, Horse Tails...	piculs	1,125	406	63	461	973
Horns, Deer, Young	pairs	1,605	982	2,073	1,650	1,685
Jadestone, Siuyen	piculs	1,092	902	2,508	1,396	1,305
Liquorice	,,	705	955	882	16	262
Macaroni and Vermicelli	,,	—	43	70	56	—
Medicines ...	Value, Hk. Tls.	264,956	249,145	228,758	229,974	252,068
Musk	Taels	377	441	927	950	243
Oil, Bean	piculs	112,971	41,844	60,276	75,756	21,210
,, Castor ...	,,	13,705	4,976	6,076	9,163	7,858
Potash	,,	—	—	—	—	1,817
Prawn & Shrimp Skins	,,	2,953	4,100	6,347	6,197	5,921
Prawns & Shrimps, Dried	,,	5,684	7,593	11,822	7,758	7,774
Salt	,,	1,986,291	1,021,992	566,110	268,865	103,921
Samshu	,,	21,675	21,594	27,039	19,423	22,057
Seed, Melon ...	,,	12,818	15,389	14,756	37,749	16,095
,, Sesamum ...	,,	10,819	5,464	1,156	28,354	5,959
Silk, Raw, Wild	,,	4,675	2,703	6,492	3,046	2,263
Silk, Cocoons, Wild Pierced ...	,,	3,059	3,851	484	2,049	1,274
,, Waste ...	,,	3,141	3,048	9,036	2,282	1,504
Sinews, Buffalo, Cow, and Deer ...	,,	340	369	447	276	331
Skin (Fur) Mats Rugs, Dog ...	pieces	39,624	60,973	36,065	168,956	241,892
Soda	piculs	34	32	34	2,123	2,598
Stone (Marble, Granite, etc.) ...	Value, Hk. Tls.	—	—	11,873	34,888	89,000
Tobacco, Leaf ...	piculs	1,439	851	564	758	3,159

It will be noticed that the export of beans declined in a single term from 1,484,000 to 615,000 piculs, while shipments of beancake only fell from 2,911,000 to 2,266,000. This is accounted for by the number of small bean mills which have sprung up along the South Manchuria Railway, at which beans can profitably be turned into oil and shipped abroad through the port of Dairen, while the movement of the bulkier beancake is profitably accomplished by junks to Newchwang. Exports of kaoliang show a sharp increase, due to the demand for the grain in Shantung Province, where the 1916 crop had failed. The silk crop of 1917 was excellent, but there was a drop in the Newchwang exports due to shipments viâ Dairen. An increase is shown in the export of dogskin mats, which ordinarily find an outlet through Chinwangtao, but the great lack of shipping facilities there threw the output upon Newchwang. Exports of coal were less by 52,000 tons, due to the lack of steamer space. Exports of coal represent principally coal for bunkers.

INDUSTRIES.—A large establishment for making bricks under Japanese ownership and management is at Sanchiatu, about 4 miles above the port. There are numerous Chinese brick kilns in operation. The Newchwang Brick and Tile Co., under foreign ownership, is not now in active existence.

About a hundred shops here operate some 1,200 hand looms, partly of native make but principally Japanese, for weaving native piecegoods.

Mention is made of the electric light and waterworks facilities in the description of the port.

A Japanese managed glass factory makes lamps and chimneys.

A Chinese match factory, using Japanese machinery and materials, employs about 350 persons, mostly children, exclusive of the makers of the boxes who work in their homes.

A Chinese concern known as Tung Yu Transport and Mining Company deals in coal from mines in Chinchow and Ichou regions. The great bulk of coal exports are made by the South Manchuria Railway Company, as explained above.

Above the city a short distance is a large bean oil and beancake plant, with hydraulic machinery manufactured in Japan, known as Kodera and Company. In the vicinity are about 700 smaller presses owned by Chinese.

Paper making is carried on by a small modern plant, under Japanese ownership.

The telephone system is under Japanese control. Its plant is the product of a Japanese factory.

The Toa Tobacco Company maintain a large factory for the manufacture of cigarettes.

The waterworks here is owned by the electric light company

SHIPPING FACILITIES.—Entries of steamers at the port of Newchwang in 1917 are given in the following table:—

Flag	No.	Tonnage
American	2	6,539
British	76	75,700
Dutch	2	4,605
Japanese	99	98,183
Norwegian	1	849
Russian	3	3,265
Chinese	75	57,955
Total	258	245,096

Under "Inland Steam Navigation Rules" the following entries were made in the same year:—

	Vessels	Tonnage
British	3	243
Japanese	21	6,115
Chinese	106	35,727

The following table of steamer entries and tonnage from 1908 to 1917 make clear the remarks given in the description of the port as to the declining trade:—

Year	No.	Tonnage
1908	518	531,129
1909	643	667,553
1910	607	648,321
1911	679	713,826
1912	589	627,827
1913	631	722,141
1914	551	655,878
1915	486	534,357
1916	341	361,230
1917	258	245,096

The entries of vessels under "Inland Steam Navigation Rules" have declined from 142 of 102,566 tons in 1908 to 130 of 42,685 tons in 1917.

MERCHANTS.—Butterfield & Swire (John Swire & Sons, Ltd.); Edgar Bros. & Co.; A. Van Ess & Co.; F. D. Farmer & Co.; Jardine, Matheson & Co., Ltd.; E. S. Leeds; Mitsui Bussan Kaisha, Ltd.; Reynaud and Colinet.

LIAO RIVER CONSERVANCY.—Inseparable from the welfare, prosperity and free development of the Port of Newchwang is the efficient conserving of the fluvial highway on, and near the mouth of, which it stands. The Liao River has always been the natural gateway of Manchuria and serves a vast hinterland of some of the most potentially rich country outside the Great Wall. Before the advent of the railway from the North to Dairen, almost the entire import and export trade of Central and South Manchuria passed through Newchwang and most of it went by the Liao.

In those days, up to 12 or 13 years ago, it has been estimated that from ten to fifteen thousand native craft at a time plied its navigable waters from Tungchiangtzu on the Mongolian border to the Sea. The construction of the railway and the simultaneous rapid rise of Dairen as a modern commercial port, brought sweeping changes including the development of railway facilities at Newchwang itself, and diverted ever-increasing volumes of water-borne trade to the railway, with the result that boat-owners found no further inducement to build; at the present day it is doubtful whether 1,000 cargo boats could be mustered from one end of the river to the other.

About 1908, the late Mr. W. R. Hughes, M.I.C.E., Engineer-in-Chief to the Manchurian Provincial Government, while engaged on making surveys of the river with a view to the removal of certain shoals in its upper reaches, discovered that at a point some 45 miles above Newchwang, what was formerly an insignificant stream running out to sea some miles west of the Port at right angles to the Liao and which had been carelessly connected with the latter (it is believed by salt smugglers, though ostensibly as a flood outlet)—was taking off a considerable proportion of the Liao water which should have flowed on to Newchwang. The effect of this outlet, known as the Shuangtaitzu, was of course to aggravate the shoal obstruction in the Liao below it, which was part of what Mr. Hughes was planning to overcome. Every freshet made the position worse till there was actually more water passing out by the Shuangtaitzu than down the bed of the Liao, to the considerable hindering of native boat traffic at all times but the very rainy seasons. Strong representations to the Chinese Authorities eventually resulted in funds being raised by a boat tax for the construction of a weir and sluice gates, for the purpose not of entirely closing but of regulating the Shuangtaitzu outflow, in deference to the objections of the agricultural population who claimed that they depended upon that stream for irrigation. Mr. Hughes' scheme was to construct his weir alongside the course of the new outlet at a point a couple of miles or so from its effluence from the Liao, and, when completed, to divert the water through it, at the same time blocking the outlet's existing channel. Construction was nearly completed in the Summer of 1910, but a freshet of exceptional force supervened just before arrangements could be finished for the damming and diversion of the channel, and carried away the almost completed dam structure, at the same time still further widening the channel. It was then too late to deal with the complication that year. Meanwhile funds were almost exhausted, a change of territorial officials had occurred, and negotiations had been initiated which, after lengthy delays, culminated in the signing of the Conservancy Agreement and Regulations of 1914 at Peking between the Chinese Government and the representatives of the Powers. Under this agreement an International Board of which the Newchwang Taoyin and the Commissioner of Customs are *ex officio* president and vice-president respectively, came into existence. Its functions were to conserve the approaches to Newchwang from the sea by closing certain side channels and deepening the Bar and also to protect the port from a cut-off which was then threatening by the tendency of the river five miles above the town, at a point known as Duck Island, to break through a bend and cut a new channel for itself to the sea below the port, which would then have been subject to rapid silting, if its safety were not actually jeopardized. Mr. Hughes' services were made available free of charge, by the Provincial Government, for the technical direction of these works, and funds were derived from surtaxes on imports, exports and shipping. The Duck Island work was completed in 1917, and Newchwang is now considered to be secure from that danger.

Under the Agreement just referred to, the Chinese Authorities undertook to simultaneously and concurrently conserve the Upper river by removal of shoals, etc., in order to render it navigable again for cargo boats to the interior. It was hoped that the (Lower River) Board would have been entrusted with the Upper river also, but prolonged controversial negotiations resulted in the Upper river being left to the Chinese in deference to their national susceptibilities concerning foreign interference on purely Chinese soil. The result has justified apprehensions. Despite specious assurances and perpetual representations, nothing has been done beyond the purchase of a small amount of inadequate plant. Official apathy, local prejudices, and to an extent vested interests had meanwhile combined to produce obstruction which was not always passive for, upon Mr. Hughes' proceeding in 1913 to resume the work of damming the Shuangtaitzu outlet, he, and the officials with him, were set on by an organized mob and barely escaped with their lives. During this time the Conservancy Board made slow but steady headway with the Bar works and training banks, designed to deepen the Bar Channel by concentrating on it the force of the river's natural and tidal scours. These works had advanced considerably (despite opposition from certain quarters which claimed that the work should be undertaken by the Dairen Harbour works) when in January, 1918, occurred the sad and sudden demise of Mr. Hughes, than whom no engineer ever threw himself more unsparingly and devotedly into the carrying through of a difficult undertaking, nor toiled more patiently against exceptionally powerful and often hidden opposition and obstruction.

The question of the nationality of a successor or successors revived international discussions, which are still exercising diplomatic circles at Peking, where it is earnestly to be hoped it will soon be settled in the best interests of the Port of Newchwang, as little or no progress could meanwhile be made with the works.

It is an accepted fact that a railway has nothing to fear from water traffic, particularly in a new and rapidly developing country where the fostering of fluvial trade can but make for the further expansion and prosperity of the country—to the general welfare. The effective conserving of the Liao to an extent requisite for unhindered boat traffic with the Interior and the deepening of its Bar for the passage of heavier ocean tonnage than the present 17- or 18-foot maximum is, therefore, a measure which must conduce to the advantage of Chinese and Japanese interests in Manchuria, as well as to that of other foreigners, to the energy and determination of a few of whom the progress so far achieved has been mainly due.

The whole vast question of regulating China's waterways to best advantage is a problem which must sooner or later be faced if the country is not to be the annual loser of millions of money, the loss of which might easily be avoided. To revert only to the Liao, there are yet other factors besides those dealt with above—

such as the regulation of silt-laden tributaries like the Liu which threatens the Liao with huge masses of moving sand near Hsinmin-fu—and similar matters which may at any time assume an urgent complexion, and which demand constant study by experts and the judicious expenditure of funds which in the long run will be very far from having been thrown away.



REINFORCED TWO STOREY GODOWNS, DAIREN

Dairen

The Kwantung Leased Territory is the area of 1,300 square miles at the southernmost end of Liaotung Peninsula of Manchuria which was leased by the Russians for 25 years through the Convention of Peking signed March 27th, 1898, and fell into the hands of the Japanese at the end of the Russo-Japanese war through the Treaty of Portsmouth of September 5th, 1905. Dairen is one of the two ports of the Leased Territory, and was the port selected by the Japanese for development in preference to Port Arthur. The Japanese liked Dairen so well, after a few years of experience, that in May 25th, 1915, they persuaded China to extend its lease to the extent of 99 years from the date of the original Russian Treaty. The extended lease expires in 1997, and meawhile the holders are using every means available for making Dairen the premier port of the North. Under the Japanese occupation of the Leased Territory during the Russo-Japanese war Port Arthur, the other port, was the headquarters of the Japanese army, since when it has fallen in importance, having been neglected for the better facilities of Dairen. Dairen (called Dalny by the Russians and Talienwan by the Chinese) under Russian rule was to become the southern terminus of the Russian railway from Harbin to the sea and an all-year seaport to replace Vladivostok in the winter. The Russians planned a model town with well constructed streets and substantial buildings of brick and stone. They also had ambitious projects as to port facilities and commenced piers and breakwaters, but these were in an incomplete state at the time the place was taken over by the Japanese. The Japanese have extended the main west pier and doubled its width, and have constructed new piers and a breakwater. The harbor facilities are now very good and are being steadily improved, at heavy cost, to make this one of the best ports of the Far East and capable of accommodating the largest ship. Dairen has supplanted Newchwang as the leading port of Manchuria and has become one of the most important ports in China.

In accordance with an agreement concluded in June, 1907, between Japan and China it was decided to make the whole of the Leased Territory a free zone, that is goods brought by sea to Dairen are subject to import duties only when they cross the boundary of the leased territory into China, and those coming from China into the leased territory pay export duties only when they are exported from Dairen. A Chinese customs house was accordingly established at Dairen, opening for business on July 1st, 1907. The Commissioner of Customs and his force are Japanese. The whole of the leased Territory being a free area under foreign control, Dairen has foreign status with regard to goods imported into the leased territory, but being also a treaty port the same goods when exported are no longer "foreign goods," but enjoy the benefits of treaty ports Customs treatment. There are four Customs examination offices besides the head office at Dairen, and three outer stations, besides a branch office at Port Arthur. Exports are loaded into cars and then sealed, and the seals are examined at the last Customs outer station in the Leased Territory.

Goods entering Manchuria from the Leased Territory are supposed to pay full duty, while since June 2nd, 1913, goods entering Manchuria across the Yalu River railway bridge at



BIRD'S EYE VIEW OF DAIREN

Antung from Chosen are entitled to a reduction of one-third from the tariff, regardless of the country of origin. The Chosen Government Railways, which connect Korean ports with Antung viá the bridge, have greatly reduced their freight rates and have special through rates from Japan viâ this route. The Japanese importers at Dairen have been much exercised over the increased competition of the Antung route and also at the proposal to limit the free-trade zone in the Leased Territory and narrow it to a free zone embracing only the wharf compound, as at Tsingtau. The action of the Chosen Railways was held to be uncalled for, as "Japan being situated most advantageously with Manchuria, there exists no call for the further reduction of the through railway freights such as the specific through rates" to Manchuria by way of Antung "for it will be competing against the Japanese, whose vested commercial interests command due respect and ought not to be trampled down wantonly." The organ of the Kwantung Government thought that "another salient feature of the argum nt is that Moukden or any other centre north thereof should i ot be made the base of Japanese trade operations, in other v ords, the accumulation centre for Japanese imports, because the Chinese consumers will readily see whether the Japanese are overstocked or short stocked and will play their games accordingly." The editor called attention to the fact that goods landed at Dairen as the centre of Japanese trade could be easily reexported to other Chinese ports by sea, whereas surplus stocks in Moukden would require a long rail haul. The South Manchuria Railway finally met the situation by giving faster transhipment service at Dairen, which results in quicker deliveries to Moukden and other interior points.

The city of Dairen is the only Far Eastern example of town planning on modern lines. Broad, paved roads radiate from a great circular plaza, and buildings of foreign type in the handsomest styles line the thoroughfares. Recreation ground is provided with splendid parks, and there is a public amusement place known as "Electric Park" to be reached by tram line. Its population consists of 40,485 Japanese, 55,857 Chinese and 76 foreigners.

The city is well supplied with electricity and gas, has fine telephone, telegraph and wireless communications, and good postal arrangements. Fares on the tram lines are based on the time, and not the distance, of travel, at the rate of 6 sen per hour or 5 sen per half hour. Within the time limit a ticket is available on any line and for any number of rides in the city.

Japanese internal postage rates apply to all parts of Japan, Chosen, her island dominions, the area of the South Manchuria Railway, and to the principal cities in China under Japanese postal jurisdiction. Telegraph rates are as follow: To Japan and Chosen, 40 sen for first 5 words and 5 sen each for additional words; within South Manchuria; 25 sen for 5 words and 3 sen for each additional word; to Harbin, 10 sen per word; to China, 20 sen per word; to Harbin, 10 sen per word. The rate for wireless messages, to stations or steamers within the radius of the Dairen station, is 75 sen for 5 words and 15 sen for each additional word; to stations and steamers within the radius of the wireless stations in Japan, 15 sen extra.

COMMERCE AND INDUSTRY.—Dairen formerly ranked fifth in importance for volume of imports and exports, among all Chinese ports, after Shanghai, Hankow, Tientsin and Canton; but in 1917 Dairen took the fourth place and put Canton in the fifth. The value of Dairen's imports of foreign goods in 1917 was Tls. 63,181,630, and imports of native goods were Tls. 9,576,340. Exports in the same period were Tls. 63,187,210. The combined total was Tls. 135,945,180.

As Dairen is a free port, the foregoing figures of inward trade have been taken from the statements of imports furnished by merchants to the Customs, which are not checked. Customs control over trade in and out of Dairen begins at the border of the Leased Territory. A comparison of the imports of foreign goods and their disposition for the past several years is given below:

	1914 Million Taels	1915 Million Taels	1916 Million Taels	1917 Million Taels
Imported into the Leased Territory (free area) by sea:				
From foreign countries...	28.9	24.9	33.4	58.3
From Chinese ports	4.3	7.3	7.3	9.5
	33.2	32.2	40.7	67.8
Re-exported	3.8	4.7	5.0	5.0
Imported by rail into Manchuria ...	17.9	16.8	25.8	42.5
	21.7	21.5	30.8	47.5
Balance	11.5	10.7	9.9	20.3

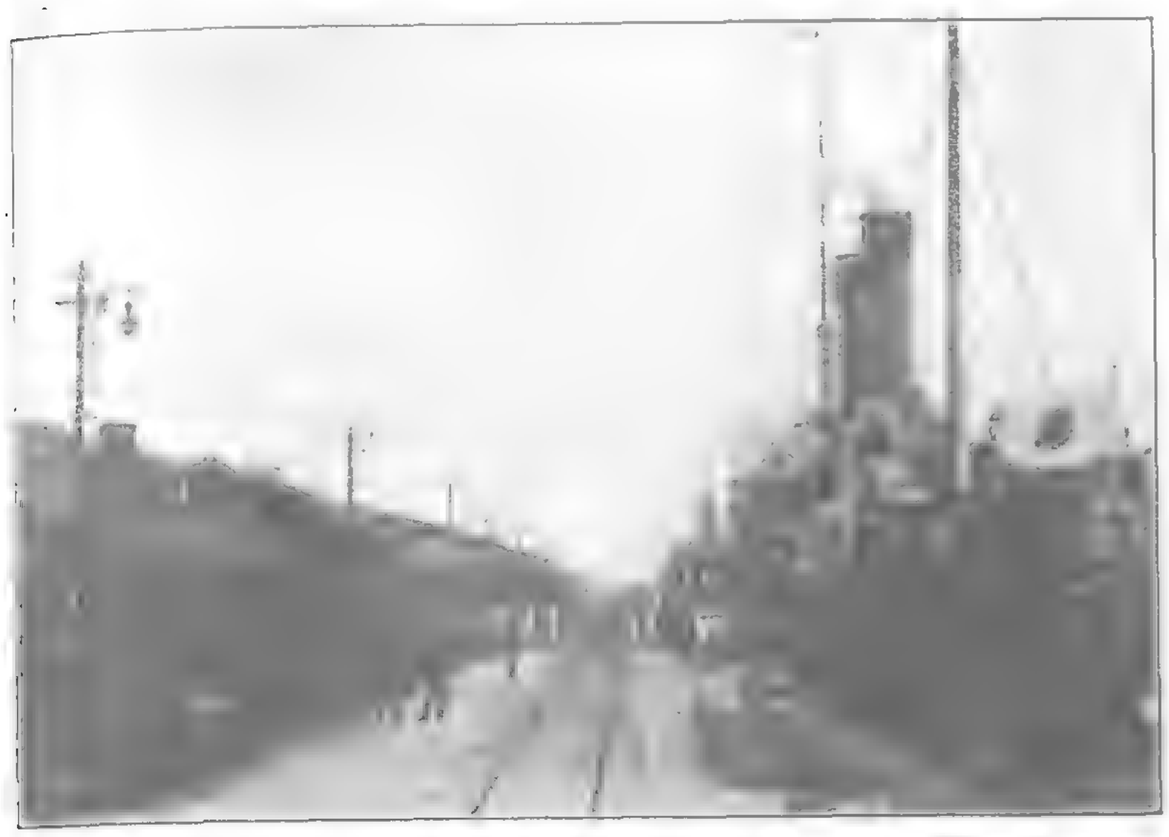
The value of direct imports and that of coastwise imports shows a most conspicuous increase, and the value of railway imports



HARBOR AND BREAKWATERS


1/15,000
Canal Protection
Nippon Yusen Kaisha Office
Nippon Yusen Kaisha Godowns
Nippon Yusen Kaisha Passenger Office
Japan Railway Co. Office
Japan Railway Co. Godowns
Japan Railway Co. Passenger Office
Japan Railway Co. Freight

is proportionately large. This phenomenal prosperity in the face of the increased difficulty in obtaining supplies of goods from European and other foreign countries may be attributed to: (*a*) increased demand attending the development of the interior; (*b*) increased purchasing power of the Chinese, owing to a good



EXPRESS TRAIN AND STEAMER CONNECTION ON DAIREN WHARVES

harvest the preceding year; (*c*) a boom in industrial enterprises in the Kwantung Territory and Manchuria; (*d*) shifting from Vladivostok to Dairen of the importing route of certain goods destined to Harbin and Russia; and (*e*) importation at Dairen of some goods which had hitherto passed through Newchwang, owing to the dearth of ships. The last item in the above table, the balance of 20.3 million taels which represents the value of goods consumed in, and the stock kept in, the Kwantung Territory, is exceptionally large. Even after deducting from this amount the value of North Manchuria beans imported from Vladivostok by sea—treated in the returns as foreign goods on importations, but as native goods when exported manufactured into beancake and oil—and of a large quantity of goods destined to Harbin and beyond, stored in wharf godowns, the surplus must be much larger than the corresponding sum for previous years. The value of cotton goods imported into Dairen increased from 4.6 million taels in 1916 to 7.2 million taels in 1917, and that of the railway import into Manchuria advanced from 3.5 millions to 5.9 millions, an almost all-round increase being noticeable in the list of principal goods. Shirtings, drills, jeans and T-cloths of English and American manufacture increased, in spite of the restrictions on their supply. The same was the case with dyes, cottons such as italians, venetians, poplins and lastings. The increase in Japanese cotton piecegoods was more conspicuous, almost twice as many pieces as during the preceding year being imported into Manchuria. Of the principal items, the increase under Japanese cotton cloth was most conspicuous. It was brought about by a large importation of Japanese imitation Chinese striped cloths, of which more than 300,000 pieces found their way into Manchuria through this port. The principal iron manufactures, except in a few items, showed an increase, the demand for them having been very large on account of the construction of the Shihpingkai-Chengchiatun Railway and the South Manchuria Railway Company's iron foundry at Lishan, as well as of the general building boom in the Kwantung Territory and South Manchuria. Of the principal articles among sundries, gunny bags, cement, cigarettes, electrical materials, flour, window glass, American kerosene oil, white sugar and softwood timber increased both in the importation into Dairen and in the railway import into Manchuria. The importation of beans from Vladivostok was very large. Cigarettes increased owing to the extension of the Chinese demand as well as the shifting of the importing route from other ports to this port. A large increase in American kerosene oil is chiefly accounted for by the Texas Oil Company importing a large quantity and establishing a depôt at Dairen for supplying Manchuria. The quantity of Japanese kerosene oil imported at Dairen remained as before. The increase in sugar, which is conspicuous, was due to the Russian demand supplied through this port, also to a large importation of raw sugar by the South Manchuria Sugar Manufacturing Company for refining at its Moukden factory. The quantity of North Manchurian beans imported by sea from Vladivostok increased from 300,000 piculs in 1916 to 800,000 piculs. During the September quarter heavy deals in beans were concluded on the Exchange, and the supply of South Manchurian beans being limited, sellers resorted to the expedient of importing North Manchurian beans from Vladivostok, which they were able to do on account of the high price of the goods then ruling in Dairen. Exports to Russia through Dairen were principally in cotton yarn, iron wire nails, boots and shoes, coconut oil, coffee beans, dyes and colors, gunny bags, leather, matches, paraffin wax, pepper and sugar. The re-exports of foreign goods mentioned in the table consisted of surplus merchandise shipped to Chefoo, Tsingtau, Shanghai, Tientsin, Lungkow, Weihaiwei, and other coast ports, as better prices were offered. Of sundry goods the principal were cotton sheetings, cotton prints, cotton yarn, cigarettes, boots and shoes, and sugar, all of Japanese origin.

EXPORTS OF CHINESE GOODS.—Adding the junk trade to the figure of exports of Chinese goods given above, the total export amounted to 67 million taels, an excess of 9.2 millions over 1916. This large surplus was brought about by a flourishing business done in the staples—beans, beancake, bean oil, and kaoliang—the exportation of which increased considerably in spite of disadvantageous exchange and the shortage of tonnage. Compared with the figures of 1916 the total export of beans increased by 432,000 to 3,316,000 piculs, which, however, is still far from recovery to the figures of former years. In addition to a large carryover of the previous year's crop of South Manchurian beans, a considerable quantity of the North Manchurian product came down to this port. The export of beancake was the largest on record, being 3 million piculs more than that for 1916. Despite the high silver exchange and stiff freight, this commodity could be laid down in Japan at a less cost than artificial manures. Exports to Chinese ports also prospered, and a portion of such exports were said to have been transhipped at Shanghai to the Dutch Indies for the sugar plantations there. The export of bean oil amounted to 1.7 million piculs, 525,000 piculs more than the record figure of 1916. The export to Europe almost ceased, owing to the dearth of ships and to high marine risks, but the shipment to America was four times as much as that of the previous year. The demand in that country was almost unlimited, and local oil mills were pressed with orders and worked at high pressure—so much so that it caused the over-production of beancake, which filled all available warehouses at the wharves, and in March and June quarters mills were compelled to restrict their output. The demand for oil seeds such as castor, hemp and sesamum, was kept up in America and Europe. Exports of coal diminished by 100,000 tons. The output of the Fushun mines was diminished by the effects of an explosion in one of the principal pits in January, and the export was hindered by the shortage of tonnage. The increased demand for the railways in Manchuria and Chosen, as well as for industrial and household use, also accounts for the decline of export.

The value of re-exports of Chinese goods transhipped at Dairen was 4.6 million taels, as against 2.6 millions in 1916. The principal re-exports were: silk and cotton piecegoods and grasscloth, imported from Shanghai and forwarded to Korea; Chefoo



PILES OF BEAN CAKE READY FOR LOADING ON DAIREN WHARVES

wild silk, transhipped to Japan; and the reshipments of bean oil, groundnut oil, woodoil, linseed, vegetable tallow, etc., to America.

Some of the principal exports of Chinese goods are given in the following table, and include the re-exports mentioned in the foregoing paragraph:

Article.	Unit.	Quantity.	Value.
			Tls.
METALS AND MINERALS.			
Copper ingots and slabs	picul	22,505	447,387
Copper, old	,,	2,240	46,302
Iron, pig and unmanufactured	,,	514,326	1,792,337
Unclassed		41,705	503,111
SUNDRIES.			
Asbestos	,,	1,976	8,237
Beancake	,,	13,052,581	19,855,957
Bean meal	,,	405,561	790,844
Beans, black	,,	31,562	60,598
Beans, green	,,	122,434	267,519
Beans, green, small	,,	79,103	225,364
Beans, red	,,	288,156	720.391
Beans, white	,,	84,095	193,418
Beans, yellow	,,	2,623,105	5,875,755
Beans, other kinds	,,	99.106	253,117
Bristles	,,	2,037	151,446
Calcium, carbide of	,,	22,993	88,539
Cement	,,	122,856	122,856
Kaoliang (sorghum)	,,	1,296,973	1,919,520
Maize	,,	286,228	701,259
Millet	,,	75.367	161,814
Wheat	,,	178,907	422,578
Clay	value	—	62,937
Coal, Fushun	tons	676,578	2,706.312
Coal, other kinds	,,	43,915	176,096
Coke	,,	8,023	41,235
Cotton, raw	piculs	1,103	22,060
Feathers	,,	1,894	25,874
Fibres, jute	,,	7,368	43,974
Flour, wheat	,,	117,153	532,526
Ginseng	catties	41,416	54,524
Grasscloth, coarse	piculs	4,242	296,940
Grasscloth, fine	,,	5,268	948,240
Groundnuts, in shells	,,	10,429	31,287
Groundnut kernels	,,	37,107	152.865
Hair, horse, manes	,,	1,623	24,391
Hair, horse, tails	,,	2,547	119,608
Hair, other animals	,,	33	10,966
Hides, ass, horse and mule	,,	4,157	86,114
Hides, buffalo and cow	,,	4,926	125,175
Leather	,,	355	18,575
Liquorice	,,	10,176	88,590
Machinery	value	—	109.889
Manure	,,	—	27,862
Manure, sulphate of ammonia	piculs	84,123	493,537
Oil, bean	,,	1,729,167	15,575,021
Oil, castor	,,	17,536	166,592
Oil, groundnut	,,	33,938	339,389
Oil, hydrogenated	,,	2,523	37,443
Oil, wood	,,	48,175	554,013
Olein	,,	1,557	13,665
Salt	,,	1,552,002	465,601
Samshu (native wine)	,,	12,508	87,556
Seed, apricot (almonds)	,,	224	2,688
Seed, castor	,,	63,262	189.608
Seed, cotton	,,	4,119	7,676
Seed, hemp	,,	157,834	347,235
Seed, linseed	,,	52,931	152,923
Seed, melon	,,	33,847	233.012
Seed, Perilla nankinensis	,,	71,186	284,744
Seed, rape	,,	905	2,489
Seed, sesamum	,,	24.619	108,412
Seed, other kinds	,,	5,367	21,689
Silk, raw, wild, not filature	,,	6,560	1,704,600
Silk, raw, wild, filature	,,	3,828	1,148,400
Silk, cocoons, wild	,,	82,067	1,047,108
Silk, waste	,,	5,847	181,257
Silk piecegoods	,,	398	372,462
Silk pongees	,,	160	60,176
Skins (furs), goat, untanned	pieces	98,308	57,458
Skins (furs), sheep	,,	166,919	83,808
Skins (furs), unclassed	,,	341,586	64,255
Skins (furs), marmot	,,	99,200	17,723
Soapstone and talc	piculs	33,437	18,959
Soda	,,	34,554	101,589
Tallow, animal	,,	1,674	21,751
Tallow, vegetable	,,	26,807	268,070
Tobacco, leaf	,,	26,355	237,195
Wool, sheep's	,,	16,900	554,833

RECENT HISTORY.—The winter of 1917-18 was the mildest that has been recorded in many years, and the harbor was practically free from ice. The temperature of the port ranged between 34 deg. 2 C. (16th August) and a minimum of 18 deg. 4 C. (7th January). The total rainfall was 743.9 millimetres, most of the downfall occurring in the second half of the year, the first half being exceptionally dry. The restriction of the city water supply continued during the first half of the year, when the water famine was relieved by a copious rainfall. An extensive reservoir above Dairen, made by stemming a stream with a dyke of immense dimensions, was completed and filled with water during the rainy season. The volume of water in the reservoir was estimated at 4.7 million tons, a quantity sufficient for two years' consumption by the present population.

On 31st July, with the object of unifying the so-called "triple administration" in South Manchuria, viz., the Kwantung Government, the Consuls, and the South Manchuria Railway Company, the Governor General of Kwantung was placed under the direct supervision of the Prime Minister, instead of the Foreign Minister as hitherto; the Consuls in Manchuria were placed under the supervision of the Governor General; and the direct control of the workings of the South Manchuria was given to the Governor General.

Construction work has been vigorously pushed on the plant of the South Manchuria Railway Company's iron foundry at Lishan, which has been named the Anshan Iron Foundry. The Anshan Works are situated between Anshanchan and Lichan on the South Manchuria Railway and are distant about 2½ miles from the latter station, the site being selected for its proximity to the river Tatsuho and the ore producing districts. It is estimated that the future annual production of these works when completed will be 1,000,000 tons of pig iron and 800,000 tons of manufactured articles. At present two furnaces of 200 tons are being installed and with them about 150,000 tons of pig iron should be produced annually. The ore for these works will be supplied by a joint Chinese and Japanese company, to which has been granted the mining rights in this particular district and it is from this concern that the Railway Company will purchase the crude ore. Imported machinery will be obtained in the United States, the remainder being made locally in the railway works at Dairen. The initial outlay on the undertaking is estimated at 15 million gold dollars. The South Manchuria Sugar Manufacturing Company's factory at Moukden was completed and began operating in December. The trial crop of beet cultivated by native farmers under contract with the company amounted to 400,000 piculs, and was reported to be of good quality, containing about 13 per cent. of sugar, and 8,000 tons of Formosan sugar was imported to be refined by the factory.

INDUSTRIES.—Among the industries of Dairen may be mentioned the following:

Two brick plants, each with a capacity for 70,000 bricks daily; a tile plant with a capacity for 20,000 tiles and 1,000 tubes daily; none of which paid a profit in 1917;

A cement factory, capable of producing 200,000 casks yearly, which paid a dividend of 12 per cent. in 1917;

A dyestuff factory;

A sulphuric acid factory, a Government enterprise;

Two bottling plants;

The Kawasaki Dockyard;

An electric light plant;

A flour mill which turned out 25,417 tons and made a profit of 9 per cent. in 1917;

A gas works;

An ice and cold storage plant, with a capacity of 10 tons daily and cold storage for about 100 tons;

Two match factories, the largest of which is able to produce 50,000 cases of 200 dozen per annum;

Five Japanese oil and beancake mills, with a total capacity of 13,800 tons of oil and 96,500 tons of cake;

Twenty Chinese oil and beancake mills with outputs ranging from 2,300 tons oil and 2,400 tons cake to 500 tons oil and 5,300 tons cake;

An oil and grease factory with capacity of 4 tons per day;

The shops of the South Manchuria Railway Company;

A rice cleaning plant with a daily capacity of 446 tons rice and 170 tons wheat meal;

Three candle factories;

A telephone system;

The tramways, owned by the South Manchuria Railway;

The waterworks.

SHIPPING.—Entrances and clearances at the port of Dairen in 1917 were as follows:

UNDER GENERAL REGULATIONS.

Steamers.

Flag.	Entered Inwards. No.	Tons.	Cleared Outwards. No.	Tons.	Total Entered and Cleared. No.	Tons.
American ...	3	4,822	3	4,822	6	9,644
British	99	113,289	99	113,294	198	226,583
Danish	4	12,062	4	12,062	8	24,124
Dutch	12	37,962	12	37,962	24	75,924
Japanese	1,320	1,438,728	1,336	1,449,017	2,656	2.887,745
Norwegian ...	7	21,614	7	21,614	14	43,228
Russian ...	11	11,328	11	11,328	22	22,656
Chinese ...	233	100,090	233	100,452	466	200,542
Total Steamers	1,689	1,739,895	1,705	1,750,551	3,394	3,490,446

Sailing Vessels.

Flag.	Entered Inwards. No.	Tons.	Cleared Outwards. No.	Tons.	Total Entered and Cleared. No.	Tons.
Japanese	277	7,366	256	6,905	533	14,271
Chinese ...	3	600	3	600	6	1,200
Total Sailing Vessels ...	280	7,966	259	7,505	539	15,471
Grand Total ...	1,969	1,747,861	1,964	1,758,056	3,933	3,505,917

UNDER INLAND STEAM NAVIGATION RULES.

Flag.	Entered Inwards. No.	Tons.	Cleared Outwards. No.	Tons.	Total Entered and Cleared. No.	Tons.
Japanese	237	67,317	232	67,171	469	134,488
Chinese ...	15	5,443	14	5,143	29	10,586
Total	252	72,760	246	72,314	498	145,074

SEA-GOING JUNKS.

	No.	Piculs.
Entered	11,451	1,142,998
Cleared	11,533	1,143,382

MERCHANTS.—F. J. Bardens; Butterfield & Swire (John Swire & Sons, Ltd.); Cornabe, Eckford & Co., Ltd.; Mitsui Bussan Kaisha, Ltd.; Thompson, Hannam & Co.

The Harbor

APPROACH AND ENTRANCE TO HARBOR.—The Port of Dairen is situated on Dairen Bay at the south-east extremity of the Liaotung Peninsula in Lat. 38 deg. 56m. N. and Long. 121 deg. 36m. E. The harbor faces north to sea, and is backed by hilly country. The entrance to Dairen Bay being commanded by three islands, the harbor is partly natural and is well sheltered. The principal part of the harbor is enclosed by the East Breakwater (1,221-ft. long), the North Breakwater (7,400-ft. long), and the Northwest Breakwater in two sections (2,800-ft. and 1,500-ft. respectively). There are three entrances to the Harbor. The principal one is the east entrance, situated between the north end of the East Breakwater and the east end of the North Breakwater, and is 1,200-ft. wide; the north entrance is between the North Breakwater and the Northwest Breakwater, and is 600-ft. wide; and the west entrance is between the two sections of the Northwest Breakwater, and is 200-ft. wide. The Harbor area enclosed by the breakwaters is about 800 acres. The Marine Office of the Kwantung Government conducts port quarantine, registration, measurement and survey of vessels asd other business connected with maritime affairs in the Kwantung Leased Territory. The enlargement of the breakwaters, the dredging of the harbor, and the reconstrection of the wharves is in the hands of the Harbor Works Office of the South Manchuria Railway Company; and the shipping business, supervision of harbor business, management of incoming and outgoing steamers and all kinds of cargo work is under the direct management of the same Company through its Wharf Office.

PILOTAGE.—A system of compulsory pilotage was adopted on November 1st, 1910, and vessels having a gross tonnage of 1,000 tons or more must not enter or leave the harbor without a pilot. Whenever the Director of the Marine Office deems it necessary, a vessel of less than 1,000 tons gross tonnage may also be required to employ a pilot.

TUG SERVICE.—The South Manchuria Railway Company, whether requested or not, will have ready mooring hands, tugs, tow-line boats, and ice-breakers and will render any assistance necessary to vessels berthing, leaving their berths, or changing berths. From the time such mooring hands, tugs, ice-breakers, and tow-line boats start work or approach a vessel they are under the direction and control of, and held to be in the employ of, the vessel concerned. If the services of the tugs, ice-breakers, and tow-line boats are not required, notice to that effect should be given to the Wharf Office beforehand.

Depth of water (tidal range).—The depth of water within the breakwaters is from 25 to 36 feet at low water of ordinary spring tide. The entrance and approach to the Harbor has a depth of 36 feet within a width of from 1,200 feet to 1,500 feet.

Anchorage.—The quays can at present accommodate 5 vessels of from 6,000 to 10,000 tons, 10 of over 4,000 tons, and 7 of under 3,000 tons.

Wharf and Warehouse Facilities.—The wharf compound adjoins the harbor on the south thereof, and has an area of about 253 acres, and within it are 48 warehouses and goods sheds capable of storing over 250,000 tons. All steamers moor at the wharves.

Free Port.—Dairen is the only commercial free port in the Far East north of Hongkong. There is no entrance fee or wharfage, only a berthing fee according to the tonnage of the vessels.

PORT FACILITIES.—All the breakwaters, wharves, piers, and warehouses in the wharf compound, and all cargo-working concerns belong to the South Manchuria Railway Company, and there is not a single article of goods passing through Dairen that does not pass through the hands of the Wharf Office.

Number of cranes and other freight:—

	Tons	Sets
Floating cranes, Lifting capacity	50	2
Floating cranes, Lifting capacity	5	5
Half Portable Cranes, Lifting capacity	3	1
Half Portable Cranes, Lifting capacity	1½	1
Portable locomotive cranes, Lifting capacity ...	25	1
Portable locomotive cranes, Lifting capacity ...	5	5
Portable locomotive cranes, Lifting capacity ...	2	2
Electric Cranes, Lifting capacity	3	4
Total		21

Lighters are used with vessel at anchor or when required, but only dangerous goods and bunker require lighters.

Number of lighters available:

Steel Lighters ...	5 per 157.4 tons	Total 787 tons	
,, ,, ...	5 per 64	,, ,, 360	,,
,, ,, ...	6 per 12/39	,, ,, 154	,,
Wooden Boats ...	10 per 5/50	,, ,, 236	,,
Total	26 vessels	Total 1,537 tons.	

All lighters are owned and operated by the South Manchuria Railway Company through its Wharf Office. Lighterage charges. are paid by the party who makes the application, as per a tariff or contract.

Warehouses.—There are 54 warehouses in the Dairen wharf compound, their total floor area covering about 45 acres. All are owned and operated by the South Manchuria Railway Company through its Wharf Office. There are three reinforced concrete two-storied godowns; 47 godowns of corrugated iron with wooden frames; one godown of corrugated iron with iron frames; one warm storage storehouse, one brick godown, and one brick godown for storing gunpowder. There is no special accommodation for cold storage. The godowns alongside the quays are used for receiving goods which are to be shipped or landed by vessels, and the rest for storing cargo. Altogether, the warehouses have a total storage capacity of over 550,000 tons of cargo and any excess of this amount is deposited in the open according to the nature of the cargo. There is a complete system of railway lines round the godowns, the total length being 35 miles, which is connected with the main railway line.

Cargo arriving by car or by other means is first stored in the godowns and that to be shipped is shifted alongside the steamer when a berth has been alotted. If goods which arrived by car are not shipped within ten days after unloading from car, storage is charged. The cargo may be taken out by cart freely alongside the godown, but when it is to be taken out by railway, the cargo is usually first gathered at a certain spot and then loaded into the car.

Handling charges range from 30 sen to 23 sen per ton for first-class to fourth-class goods for landing or loading, with 10 sen extra per ton for all classes for assorting and delivery.

The South Manchuria Railway Company voluntarily insures against damage or loss by fire, at its own expense, on behalf of the owners, without any request or mandate to do so, all goods, except coal and specified hazardous goods, kept in the Company's custody on Dairen wharves, but reserves the option either to insure or not insure the goods kept in the Company's custody not under the General Regulations concerning warehousing. As to goods landed from vessels but not yet delivered, the Company insures against fire only those which they are requested to do by the owners.

The South Manchuria Railway Company always keep a large stock of its Fushun coal at its depôt on the East Quay, and bunker coal can be supplied at any time promptly. Vessels moored alongside the wharves can take bunker coal directly from the wharves or from lighters, according to circumstances. Capacity, when taking coal directly from the wharves, 700 tons per 10 hours: when taking coal from lighters, 500 tons per 10 hours. The Standard Oil Company of New York has an oil tank with a capacity of 1,780,000 gallons at the oil pier 1½ miles east of the port, and ships can be supplied with an oil pipe of 6 inches diameter.

There is one dry dock in Dairen. It is a branch of the Kawasaki Dockyard Company of Kobe. It is 412 ft. long, 20 ft. deep, and 51 ft. 6 in. wide, and is the only dry dock in North China capable of admitting ships up to 6,000 tons. Every description of repairs to hull and engine can be attended to, and salvage experts and divers are supplied at short notice.

Good water can be supplied at any time. Vessels alongside the wharves can take water from the hydrants, and vessels in the roads from the water boats. Capacity, taken directly from hydrant, 50 tons per hour; taken from water boat, 35 tons per hour.

The water rate is 35 sen per cubic meter if supplied from the wharf hydrants and 50 sen per cubic meter if supplied by water boat.

PORT CHARGES.—The charge for towage is Yen 15 per hour or less. There is no charge for the use of springs, buoys, or slings for horses. Other charges are as follows:

TARIFF.

I.—Charges for coolies working cargo on board the vessel.

(*a*) General services.

1. Ordinary cargo ... ... 15 *sen* per ton.
   For good exceeding 1 ton per package, the charge shall be fixed separately.
2. Special cargo.

Camels, cattle, horses, mules, donkeys (not in receptacles)	20 *sen*	per head
Sheep, goats, pigs (not in receptacles) ...	5 ,,	,,
Small craft.	40 ,,	,,
Corpses	50 ,,	,,
Dangerous goods:—		
Petroleum, matches	14 ,,	per ton.
Others	20 ,,	,,
Valuable goods:—		
Up to 1,000 *yen*	5 ,,	
Above 1,000 *yen*, for every additional 1,000 *yen* or fraction thereof	1 ,,	

(*b*) Special services.

Special services shall be matter of agreement on each occasion.

II.—Landing, loading, and assorting and delivery charges.

(*a*) Ordinary cargo.

	Landing or Loading	Assorting and Delivery.
1st class goods ... ...per ton	30 *sen*	10 *sen* per ton for all classes
2nd ,, ... ,,	28 ,,	
3rd ,, ... ,,	25 ,,	
4th ,, ... ,,	23 ,,	

For goods of more than one ton each, the charge shall be fixed separately.

The charge for sailing vessels shall be fixed separately.

(*b*) Special cargo.

	Landing or Loading.	Assorting and Delivery.
Camels, cattle, horses, mules, donkeys (not in receptacles) ... ...per head	1 *yen*	—
Sheep, goats, pigs (not in receptacles) ... ... ,,	20 *sen*	—
Small craft ... ...each	2 *yen*	—
Corpses ... ... ,,	1 ,,	—
Dangerous goods:—		
Matches ... ...per ton	30 *sen*	20 *sen*
Others ... ... ,,	60 ,,	20 ,,
Valuable goods:—		
Up to 1,000 *yen*	25 *sen*	
Over 1,000 *yen*, for each 1,000 *yen* or fraction thereof	4 ,,	

(*c*) Special loading charges.

Beans	20 *sen* per ton
Bean Cake	21 ,, ,,
Cereals and seeds	21 ,, ,,
Salt	21 ,, ,,
Wild cocoons	22 ,, ,,

III.—Temporary Custody Charges.

(*a*) Ordinary goods, per ton per day.

1st class	4 *sen*
2nd ,, ...	3.5 ,,
3rd ,, ...	2 ,,
4th ,, ...	2.5 ,,

(*b*) Special goods, per day.

Small craft	15 *sen* each
Corpses	10 ,, ,,
Dangerous goods	10 ,, per ton.
Valuable goods, for each 1,000 *yen* or fraction of same	2 ,,
Timber, included in the 4th class	1.5 ,, ,,

IV.—Charges for the handling of left-over goods.

Ordinary goods	10 *sen* per ton.
Small craft	50 ,, each
Corpses	25 ,, ,,
Dangerous goods	10 ,, per ton
Valuable goods, for each 1,000 *yen* or fraction of same	5 ,,

Rates for warehousing are as follows:

Class 1 goods	4 sen
Class 2 ,, ...	3.5 sen
Class 3 ,, ...	3 sen
Class 4 ,, ...	2.5 sen

Delivery outside the wharf compound is not undertaken by the Company. The Wharf Office will act as agent for the forwarding of cargo, collection of advances, transaction of Customs formalities, the making of contracts of insurance, and other business. In the case of forwarding by railway being entrusted to the Wharf Office, the only charge made is the loading (or unloading) charge of 30 sen per ton. There are also several private forwarding agencies in the port.

Loading and Discharging.—The average quantity of inward and outward cargo handled per day is nearly 20,000 tons. The record for inward cargo is 8,000 tons and for outward cargo 19,000 tons.

All checking or talleying is done by the Wharf Office either on the gangway or on the vessel. The tallymen at the warehouse and the vessel give and receive tally sticks of differnt colors which are carried by the coolies who are working the cargo. A vessel may appoint its own tallymen when desired. The Wharf Office gives the captain a landing note which is equivalent to a receipt for all the cargo in the manifest, which indicates whether the cargo was received in good condition, or short, partly damaged, etc. All cargo handling being entirely in the hands of the Wharf Office of the South Manchuria Railway Company, the Company assumes responsibility and liability except as provided in Article 4 of the Port Regulations, which reads as follows:

"Article 4.—The Company shall exercise due care in the handling of cargo.

The Company shall not be responsible for loss or damage caused while cargo is being worked unless it is due to the wilful act or gross carelessness of the Company's employes.

The Company shall not be responsible for loss or damage caused by the act of God, commotion, fire, wind, rain, snow, dew, frost, rain-leakage, waves, flood, damp, worms or insects, vermin, the nature of the cargo, imperfect packing or defective marking, climate, disinfection or quarantine, acts of the Authorities, strikes or lock-outs, robbery, and other acts of *force majeure* or through unpacking or insufficient protection."

All freight landed from steamer that is not taken delivery of within four days of landing and freight unloaded from railway cars that is not taken delivery of within 7 days of unloading to be transferred to ordinary storage by the Company on behalf of the owners. Undelivered and unclaimed freight is held in the

Company's custody for a period ranging from two months to two years. On the lapse of six months, notice will be given the owners or their agents pressing them to take delivery of their goods. If not claimed on the lapse of two months, the Company will notify the owners or their agents of its intention to sell the goods by public auction. The proceeds will be held by the Company until claimed by the owners.

Freight between ship and Customs warehouses is handled only by the Wharf Office of the S. M. Railway Company. According to the "Regulation Governing Cargo at the Wharves," the handling of cargo inside the wharf enclosure is entirely in the hands of the Company, and the coolies necessary for this work shall be only those who are employes of the Company or others who have received the special permission of the Company. Coolies working cargo on board vessels moored at the wharves shall be only those who are supplied by the Company or those who have received the special permission of the Company.

COASTAL AND INLAND STEAMER AND BOAT SERVICE.

List of Lines	Ports of Call.	Service.
Dairen Kisen Kaisha—		
1. Dairen-Antung-Tientsin Line	December-March. Dairen-Chinwangtao.	6 times a month from April to November.
2. Dairen-Lungkou Line	Dairen-Port Arthur-Tengchow-Lungkou-Shihhutsui.	6 times a month.
3. Dairen Tsingtao Line		5 times a month.
4. Dairen-Pitsuoo Line		8 times a month.
5. Dairen-Liushutun Line		Thrice a day.
Awa-kyodo Kisen Kaisha—		
6. Dairen-Chefoo-Chemulpo Line		4 times a month.
7. Dairen-Chefoo-Tsingtao Line		5 times a month.
Chosen Yusen Kaisha—		
8. Chemulpo-Dairen Line	On outward: Chemulpo-Chefoo-Dairen on homeward Dairen-Tsingtao-Chemulpo.	

REGULAR DEEP SEA STEAMSHIP LINES.

List of Lines	Ports of Call.	Service.
Osaka Shosen Kaisha—		
1. Osaka-Dairen Line	Regularly at Osaka, Kobe, Moji and Dairen; and once a week at Ujina.	Twice a week.
Osaka Shosen Kaisha—		
2. Takao-Dairen Line	On outward: Takao-Keelung-Foochow-Shanghai-Tientsin-Dairen. On homeward: Dairen-Shanghai-Foochow-Keelung-Takao.	Twice a week.
Nippon Yusen Kaisha—		
3. Yokohama-North China Line	On outward: Yokohama-Nagoya-Yokkaichi-Kobe-Moji-Chemulpo-Dairen-Taku-Newchwang. On homeward: Newchwang-Dairen-Moji-Kobe-Yokohama.	Twice a week.
S.M.R. Co.—		
4. Shanghai-Dairen Line	Dairen-Tsingtao-Shanghai. Shanghai-Tsingtao-Dairen.	Twice a week.
Dairen Kisen Kaisha—		
5. Dairen-Hongkong Line	Dairen-Chefoo-Hongkong.	Once a month.
6. Dairen-Manila Line	Dairen-Hongkong-Manila.	Once a month.

Antung

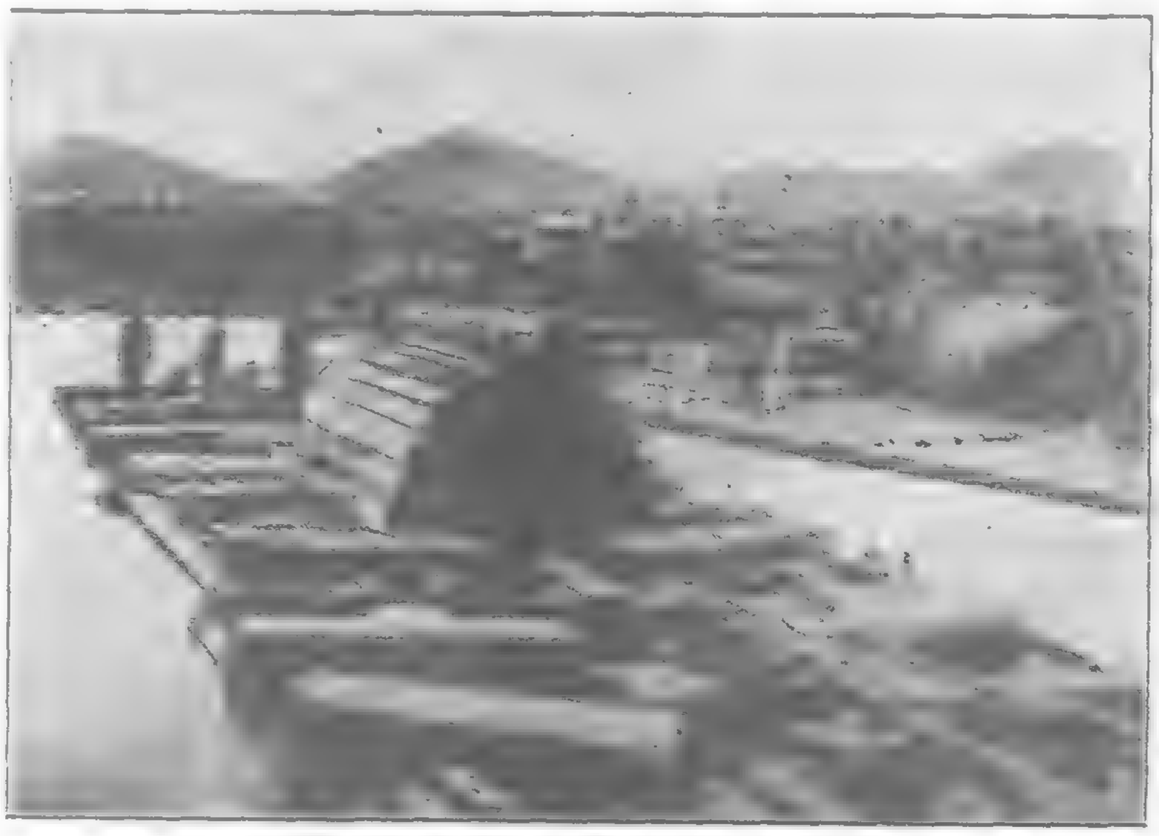
Antung is situated in lat. 40 deg. 7 min. 40 sec. N., long 124 deg. 23 min. 21 sec. E., on the Manchurian bank of the Yalu River, the stream which separates Manchuria from Korea.

For centuries the area lying between the Yalu and Amur Rivers seems to have had no well-defined nation, such as the Mongols and Koreans, until the Manchus overwhelmed and subdued the many nomad tribes who made it their home. Its possession was contested for centuries; the passage of the Yalu has been disputed countless times, nearly always at Chungkiang Island, which lies between Antung and Old Wiju, 10 miles above the city. The Chinese, Koreans, Mongols, Manchus, Russians and Japanese have struggled here during the ages. Yalu battlefield, the scene of one of the greatest fights in the Russo-Japanese war, is in the neighborhood.

In the 17th century, after Korea had fallen to the Chinese, Chungkiang Island was the site of a trading station founded for the interchange of goods between the Korean and Chinese traders. Until 1894, when Korea passed under the influence of the Japanese, tribute bearers from the Korean court crossed the Yalu at Chungkiang twice each year and proceeded to Peking by way of Fenghwangcheng, Moukden, Shanhaikwan and Tungchow. Certain facilities were granted to the members of the tribute mission in trading Korean ginseng for Chinese products along the route, and gradually this privilege was usurped by unofficial tradesmen who joined the caravan as their only way of communicating with the Chinese merchants. It was in this way that the trade route through Antung was opened, and while a limited amount of native trade had sprung up through Chungkiang Island and later through Antung, the real growth of the port did not begin until the Russo-Japanese war, when the Japanese were heavy purchasers of the timber which is rafted down the river. Formerly the timber had passed Antung and proceeded to Tatungkow, at the river mouth, for breaking up and sale, and the activities of the Russians in the Liaotung Peninsula had fostered the trade as early as 1901; but during the Russo-Japanese war the Japanese prohibited the passage of timber beyond Antung, and there the timber trade remains.

Although the port is situated some 25 miles from the sea, it is connected by coast steamers with nearby cities—with Chefoo by regular sailings and with Dairen by two weekly sailings; and by land with the railway which extends to Moukden in the north and there joins the line which extends from Dairen and Port Arthur in the south to Changchun and Harbin, and the Northern Chinese railways to Tientsin and Peking. The Korean railways connect with Antung by a bridge across the Yalu and extend to Seoul and the Korean ports.

Antung was opened to international trade in 1903, but the outbreak of the Russo-Japanese war and the incidents which followed delayed the foundation of the Maritime Customs there until 1907. In the ten years which followed the trade increased from four million taels to forty millions. The port was of little consequence until the conversion of the Moukden-Antung line of the South Manchuria Railway from narrow to standard gauge in October, 1911, and the construction simultaneously of the Yalu Bridge, 3,007 feet in length, which connects Antung with the line to Seoul and Korean ports. The connection of the Moukden-Antung and Korean railways by these two lines saves nearly two days in the journey between Manchuria and Japan and also com-

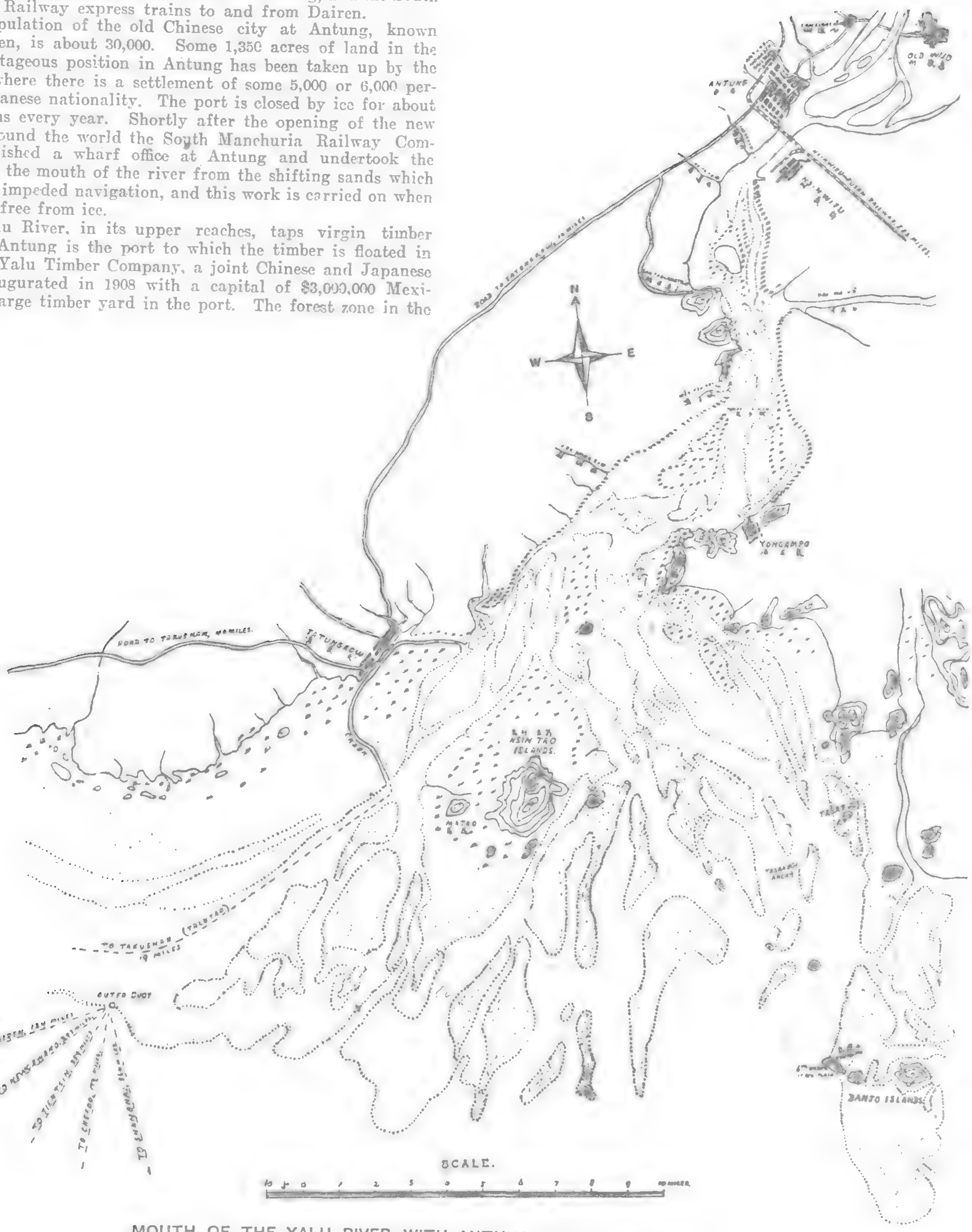


RAFTS OF TIMBER ON THE YALU AT ANTUNG

pletes the Trans-Continental Route from the English Channel to the Tsushima Straits. The trains of the South Manchuria Railway now run direct from Fusan, on the Straits, to Changchun in about 25 hours; and at Moukden *en route* connection is made with the Trans-Siberian trains to and from Harbin, the Moukden-Peking express trains to and from Peking, and the South Manchuria Railway express trains to and from Dairen.

The population of the old Chinese city at Antung, known as Shahochen, is about 30,000. Some 1,350 acres of land in the most advantageous position in Antung has been taken up by the Japanese, where there is a settlement of some 5,000 or 6,000 persons of Japanese nationality. The port is closed by ice for about three months every year. Shortly after the opening of the new highway around the world the South Manchuria Railway Company established a wharf office at Antung and undertook the dredging of the mouth of the river from the shifting sands which had greatly impeded navigation, and this work is carried on when the river is free from ice.

The Yalu River, in its upper reaches, taps virgin timber lands, and Antung is the port to which the timber is floated in rafts. The Yalu Timber Company, a joint Chinese and Japanese concern inaugurated in 1908 with a capital of $3,000,000 Mexican, has a large timber yard in the port. The forest zone in the



MOUTH OF THE YALU RIVER, WITH ANTUNG IN THE DISTANCE

Distances from the Outer Buoy are: To Dairen, 124 miles; to Newchwang, 293 miles; to Tientsin, 359 miles; to Chefoo, 178 miles; to Shanghai, 546 miles. The map is from the Customs' report.

interior is so large and thickly wooded that an estimate has been made that the company may safely take out 20 million square feet of timber during its 25-year term without exhausting the supplies to an appreciable extent. Of the wood floated down from the forests, 60 per cent. is red pine of several varieties, 30



TIMBER RAFT ON THE YALU RIVER

per cent. is common pine of several kinds, and the remaining 10 per cent. is made up of elm, oak, larch, lime, walnut, willow and poplar. The company farms out the right to fell timber; operating costs are high, and in previous years it has been difficult to meet the competition of imported lumber in the important markets in the East. With the rise in ocean freights during the European War, the price of foreign timber has risen sharply and the company now enjoys a large business. The company conducts blasting operations on the river at the points where there are obstructions against rafting, and has so far cleared about 200 miles of the stream.

It is interesting to note the rapid growth of Antung's trade since the establishment of the Customs station. In 1907 the total value was four million taels; in 1908 it was six millions; in 1909 over eight millions; in 1910 nearly nine millions; in 1911 ten millions; in 1912 eleven millions; in 1913 fifteen millions. In 1914 the passage of war supplies from Japan to Russia by way of Korea increased the total to twenty millions; in 1915 it was twenty-four millions; in 1916 it was twenty-eight millions; while in 1917 the imports and exports reached the great total of Tls. 43,277,499.

This growth represents the increasing development of Manchuria and proves also, since a large percentage of the trade is rail-borne goods from Japan and *vice versa*, the benefits accruing to well-managed and cheap railway communication such as the Railway provides. A contrast in the cost of rail transportation is given in a typical shipment of a carload of timber from Antung to Tientsin. The charge on the Japanese lines from Antung to Moukden (170 miles), works out at Tls. 0.158 per mile; from Moukden to Tientsin by the Chinese line (435 miles) the charges come to Tls. 0.378 per mile.

Some years ago, before the Japanese had any interest in Manchuria, an agreement was entered into between Russia and China whereby a reduction of one-third of the Customs duties was allowed on goods imported into or exported from China over the Manchurian frontier. When Japan annexed Korea in 1910 she made a claim for the same treatment over the Korean border. The Chinese government refused to look upon the passage of goods to and from Korea as frontier trade, owing to the division of the two countries by the Yalu River. When the Yalu bridge was opened in 1911 the Japanese Minister at Peking again pressed the claim, and on this occasion the Chinese Government had no ground for refusal. The reduction of one-third the import and export duties over the Korean border was put into force on June 2, 1913, and has greatly increased the amount of trade between Japan and Manchuria. One result has been that it is profitable to send goods from North China to Manchuria by way of Korean ports, the Korean railway, and Antung, instead of through the port of Newchwang and by Chinese railway, for the saving in Customs duties.

This customs treatment combined with modern and efficient water and rail transportation gives Japanese merchants a tremendous advantage in imports into Manchuria, as shown by the Customs returns. It is true that the Chinese rail-borne traffic from Shanghai, Hankow and Tientsin does not pass through the Customs and is not included in their figures. What with high railway charges and interior taxation, however, the rail-borne commerce through China in all probability offers little competition with Japan. The reduction in export duties and modern transportation facilities puts the Japanese at an advantage again in purchasing the products of Manchuria. The Commissioner of Customs has pointed this out in the instance of a shipment of 100 catties of wild silk to Shanghai as compared to Yokohama. If the shipment went direct to Shanghai and paid full duty, the costs would be Tls. 8.71; if to Shanghai by way of Dairen (a foreign port, and, therefore, having the advantage of the duty reduction) the charges would be Tls. 5.85. On the other hand, the duty reduction and modern transportation facilities make it possible to land the shipment in Yokohama at a cost of Tls. 3.16. Moukden, the great trading centre of Manchuria, is about 1,259 miles from Shanghai, 1,271 miles from Hankow, and 1,216 miles (including 122 miles of sea route) from Osaka.

COMMERCE AND INDUSTRY.—In 1917 the imports of foreign goods amounted to Tls. 28,825,853 and of native goods Tls. 1,289,083. Exports in the same period totalled Tls. 12,752,380.

The value of the imports totals $30,717,235 gold, or an increase of 87 per cent. over the gold value of the 1916 imports. However, this figure is misleading, being due in part to the higher value of silver as compared with gold in 1917. The increase of the silver figures in 1917 over 1916 was really 49 per cent. Much of the increase is accounted for by the passage of clothing, shoes and footwear from Japan to Asiatic Russia. In the absence of statistics indicating the countries of origin of goods imported into Antung the proportion of the total value of imports from each country has been estimated as follows: Japan (including Korea) 97 per cent.; Great Britain, 1.33 per cent.; United States, 1 per cent.; and Dutch Indies and Straits Settlements 0.33 per cent.

It will be noted from the statistics of imports given below that cotton goods as a group constitute the most valuable item in the total value of imports. The percentage of trade distribution mentioned above applies roughly to the piecegoods trade as well. The important articles are shirtings, sheetings, drills, jeans and T cloths; and the tendency of the trade is shown by the Customs statistics of imports of American goods of these kinds which declined from 62 thousand pieces in 1912 to 9 thousand pieces in 1917, and by imports of British goods of the same kinds which declined from 80 thousand in 1912 to 13 thousand in 1917; while on the other hand Japanese manufactures in the same lines increased from 83 thousand to 1,165 thousand pieces in the same term. Another important item, Japanese cotton cloth, increased from 270 thousand in 1912 to 66 million in 1917.

Principal imports in 1917 are given in the following table:—

Articles.		1916		1917	
		Quantity.	Value. Gold $	Quantity.	Value. Gold $
IMPORTS.					
Foreign cotton goods:					
Blankets	number	75,904	40,629	133,885	187,553
Cambrics, lawns, and muslins, white, dyed, and printed	pieces	3,606	5,515	7,167	13,849
Cloth—					
Japanese	yards	48,404,799	2,111,796	66,034.120	4,042,334
T cloths—					
Dyed and Turkey-red ...	pieces	8.914	22,298	17.409	48,468
Plain 32 inches.	do.	10,025	16,495	17,981	41,197
Yarn, dyed	yards	3.614.976	217.590	11,505,831	1,060,533
Crêpe, Japanese ...	do	348,938	26,065	1,523,991	121,475
Drills—					
American	pieces	2,880	10,783	1,230	5,363
Japanese	do.	250,911	687,384	160,793	632,819

Articles.		1916 Quantity	1916 Value Gold $	1917 Quantity	1917 Value. Gold $
IMPORTS.					
Flannettes—					
Plain, dyed, and printed	pieces	54,271	169,580	102,314	414,310
Yarn, dyed	do.	4,938	18,160	931	3,571
Handkerchiefs	dozens	23,084	8,118	39,734	14,054
Italians, venetians, and lastings—					
Figured	pieces	2,401	7,613	1,685	7,719
Plain, fast black	do.	4,427	20,717	2,322	14,874
Plain, colored	do.	19,931	67,343	107,767	257,523
Jeans—					
American	do.	—	—	320	1,681
English	do.	8,020	26,372	4,325	16,779
Japanese	do.	227,850	577,366	255,102	842,793
Poplins—					
Figured	do.	3,927	29,945	5,119	50,365
Plain, colored	do.	2,737	12,724	13,445	80,816
Prints, plain	do.	3,351	8,184	74,913	232,290
Sheetings, Gray, plain—					
American	do.	14,109	48,374	7,964	31,112
English	do.	5,322	18,161	1,803	8,189
Japanese	do.	602,202	1,666,363	578,320	2,140,504
Shirtings, gray, plain—					
American	do.	600	1,920	255	1,218
English	do.	5,367	17,826	7,037	25,895
Japanese	do.	71,342	207,990	153,355	627,244
Shirtings, white	do.	50,970	165,866	72,069	328,054
Thread—					
In balls	pounds	15,333	8,247	23,866	15,992
On spools	gross	14,403	45,574	9,663	45,922
Towels	dozens	207,352	94,642	187,282	130,163
Velvets and velveteens	yards	51,074	10,809	177,079	58,990
Yarn—					
Gassed, mercerized, and dyed	pounds	855,866	347,660	2,501,733	1,525,595
Plain	do.	8,339,733	1,302,548	9,923,200	2,080,900
Chinese cotton goods :					
Cloth, fancy	pieces	4,484	8,717	8,370	16,263
Drills	do.	4,975	19,571	6,390	36,659
Nankeens	pounds	557,466	154,920	313,066	121,376
Sheetings	pieces	15,302	57,052	28,748	163,744
Yarn	pounds	70,133	15,513	28,133	11,750
Foreign woollen goods :					
Blankets and rugs	do.	20,704	13,291	791	780
Cloth, coatings, and suitings	yards	19,468	17,487	207,963	307,046
Long ells	pieces	340	2,335	190	1,770
Yarn, woollen and worsted	pounds	4,000	3,668	32,933	46,867
Wool and cotton unions, unenumerated	yards	2,218	1,720	362,398	496,187
Woollen goods, unenumerated	do.	21,309	10,260	343,553	558,643
Foreign silk piece goods :					
Mixtures	pounds	710,133	12,484	816,666	18,179
Plain	do.	261,066	13,025	1,150,133	76,196
Chinese silk piece goods	do.	11,866	45,072	11,733	57,172
Foreign metals :					
Brass bars, sheets, wire, etc.	do.	117,733	35,745	25,466	44,947
Copper bars, nails, plates, rods, sheets and wire	do.	10,800	2,532	11,066	3,715
Iron and mild steel, new—					
Bars	do.	36,133	1,360	62,533	3,022
Nails and rivets	do.	297,733	15,637	619,600	39,920
Pipes, tubes, and wires	do.	56,532	2,789	13,200	531
Sheets and plates	do.	116,666	4,427	49,866	3,158
Iron and mild steel, old	do.	1,843,333	28,217	899,466	25,027
Iron, galvanized—					
Sheets	do.	68,933	5,043	15,200	1,744
Wire	do.	52,400	3,121	112,933	9,525
Iron ore	do.	65,990,133	70,380	61,803,866	84,608
Foreign sundries :					
Bags	number	4,207,428	230,197	5,031,388	339,340
Bêche de mer	pounds	128,533	28,891	122,400	28,105
Boots and shoes	pairs	62,894	93,466	392,047	1,052,347
Buttons, brass and fancy	gross	83,360	16,365	1,718,482	401,689
Candles	pounds	205,733	21,339	394,666	61,989
Cattle	number	641	15,798	937	28,000
Cereals—					
Rice and paddy	pounds	31,256,266	827,927	25,236,266	823,302
Other cereals	do.	490,065	6,220	10,092,266	135,540
China and earthenware		—	20,168	—	45,564
Cigarettes	thousands	144,153	187,144	100,272	134,672
Cordage	pounds	508,933	26,523	808,533	41,309
Fish and fish products, n.e.s.	do.	2,662,400	87,046	6,507,056	249,063
Fruits, fresh	pounds	3,982,800	80,849	7,544,266	178,049
Furs	pieces	123,157	55,774	168,280	85,109
Hides and skins	pounds	485,333	89,231	640,666	146,226
Hosiery	dozen	581,859	557,489	790,414	866,195
Indigo, artificial	pounds	96,400	61,143	12,133	11,498
Leather	do.	1,216,666	619,114	1,423,533	1,594,098
Matches	gross	238,281	46,771	155,446	30,696
Medicines			—	180,475	—	127,607
Oils—					
Kerosene—					
American	gallons	180,620	30,110	619,340	193,571
Japanese	do.	117,480	19,633	125,996	27,218
Sumatra	do.	728,360	119,037	178,650	36,573
Lubricating	do.	18,829	3,023	62,193	7,482
Vegetable	do.	208,544	163,690	29,741	22,003
Paper and cardboard	pounds	1,272,133	170,569	1,977,466	241,611
Softwood	square feet	5,414,710	50,571	2,204,283	103,151
Soy	pounds	491,066	15,795	819,200	30,001
Stearin	do.	1,419,200	161,447	746,933	76,642
Sugar, brown, white, and refined	do.	3,495,065	147,896	6,282,800	286,334
Tobacco	do.	200,933	28,210	675,000	58,418
Wearing apparel, including clothing, hats, and leather gloves			1,071,740	—	959,695
Chinese sundries :					
Cigarettes	pounds	63,066	21,793	43,866	26,524
Cotton, raw	do.	1,151,466	167,719	705,866	168,272
Flour, wheat	do.	18,086,800	413,933	8,710,000	106,954
Grass cloth	do.	52,933	23,891	46,933	25,085
Leather	do.	102,800	21,754	72,133	22,347
Paper :					
First quality	do.	207,733	23,822	209,200	30,860
Second quality	do.	1,738,800	105,859	1,686,400	129,993
Joss	do.	120,800	24,738	124,800	29,152
Rice and paddy	do.	461,066	12,820	557,866	16,738
Tea :					
Black	do.	108,933	21,046	70,400	17,121
Green	do.	37,783	6,876	93,866	22,388
Tobacco, prepared	do.	180,000	36,851	202,000	43,715

EXPORTS.—Some of the principal exports are given below:

Articles.		1916 Quantity	1916 Value. Gold $	1917 Quantity	1917 Value. Gold $
Bean cake	pounds	98,568,533	1,028,718	226,336,133	3,030,075
Beans	do.	36,190,932	537,172	77,361,066	1,392,220
Cereals :					
Corn	do.	4,290,933	55,978	12,063,666	138,489
Millet and kaoliang (sorghum)	do.	1,687,733	32,878	43,264,000	1,007,200
Wheat	do.	480,266	10,127	193,466	4,658
Coal	tons	205,287	1,207,279	315,740	1,449,248
Coke	do.	2,374	15,522	4,038	28,694
Flour, wheat	pounds	4,010,933	109,449	5,432,400	148,119
Iron and steel manufactures	do.	308,400	13,416	246,133	10,652
Medicines		—	31,530	—	35,095
Oil, bean	pounds	5,034,933	271,183	6,230,000	467,063
Samshu	do.	198,533	12,950	269,866	17,573
Seeds, sesame and other	do.	1,839,466	55,718	8,653,333	294,338
Silk :					
Cocoons	do.	5,237,000	612,260	6,240,666	919,310
Pongees	do.	13,600	10,415	5,866	7,715
Raw, wild, not filature	do.	605,066	870,732	371,333	616,432
Waste	do.	591,733	232,617	252,000	138,802
Timber :					
Hardwood	pieces	19,077	42,796	28,809	113,150
Softwood	do.	569,997	1,539,684	346,529	1,264,351
Poles	number	64,714	47,011	70,167	67,121
Wool, sheep	pounds	531,466	139,390	498,133	108,501
Yeast	do.	225,066	8,542	232,933	17,073

The value of the exports in gold dollars totalled 13,007,428. More than 50 per cent. of these exports originated in the interior of Manchuria, and the remainder came from the Antung district. Of this figure beans and bean products account for 37, silk and silk products 13, timber 11, coal 11, cereals 0.9, and miscellaneous items 27.1 per cent.

Exports of beans were 77,361,066 pounds; of bean cake 226,336,133 pounds and of bean oil 6,230,000 pounds. There are 13 bean-oil mills in Antung. The oil is pressed from the soya bean and the residue made into large, round, flat cakes. The oil finds its principal market in America, being shipped by way of Japan; the bean cake is shipped mainly to Japan, where it is

used as fertilizer, and to South China where it is used as cattle food and fertilizer. The trade in bean cake is highly speculative, relying mainly on the erratic market value of rice in Japan—when a high price of rice is anticipated, large purchases are made on future contracts. As rice was high in Japan in 1917, the purchases of bean cakes nearly tripled the 1916 exports. The bean oil business has increased from 384 thousand pounds in 1913 to 6 million pounds in 1917, due to the American demand.

A brisk demand for silk products, such as for pongee fabrics in America and Japan, was responsible for the large exports of Manchurian tussah silk in 1917. Silk filatures—the factories where the silk is reeled from the cocoons and made into thread ready for the loom—increased from 17 to 26. Where heretofore the greater part of the cocoons were exported, it is estimated that if the existing filatures run to capacity more than 50 per cent. of the total crop will be reeled in Antung and if the growth of the industry continues only a negligible percentage will be exported. The increase in the number of filatures has occurred at the expense of the industry of Chefoo; in almost every instance the new filatures at Antung have been erected by Chinese owners of filatures at Chefoo. As Japan is the principal market for tussah, and it is cheaper to transport silk thread than cocoons, a great expansion of the filature industry is looked for. In 1916 about 75 per cent. of the silk went to Shanghai and 25 per cent. to Yokohama; the percentages were exactly reversed in 1917. This change was brought about by conditions in America, the eventual purchaser of pongee fabrics, which called for finished pongees rather than tussah; and as Japan is a manufacturing centre, while Shanghai only serves as a shipping point for reeled silk, the trade naturally shifted to Yokohama.

It is estimated that the 1918 fall crop of cocoons, from which silk for pongees are made, exceeds that of 1917 by 3½ per cent. in south-eastern Manchuria. The crop is valued at $3.745,000, gold.

While the demand for timber in North China was brisk during the year, due to the prohibition of exports from the American Pacific coast, the lack of water in the upper Yalu prevented the floating of many rafts and a shortage of timber resulted. In addition to the lumber passing through the Maritime Customs, the South Manchurian Railway advise that in 1917 they transported 80.253 tons of timber into Manchuria by rail.

The Chinese firms in Antung are not equipped to export to Western countries, and for this reason the products of the district are sold in the principal Japanese and Chinese ports. The only banking facilities in the port are Japanese. The principal Japanese bank does not issue or negotiate drafts on any foreign country save Japan.

TRANSPORTATION FACILITIES.—Mention is made of water and rail transportation in the foregoing.

PORT FACILITIES.—A sand bar prevents the passage of ocean-going steamers beyond Santaolangtow, 6½ miles below Antung. Cargoes are lightered to the city from this point.

In 1917 entries of steamers at Antung totalled 216 of 93,973 tons; of these 133 of 47,215 tons were Japanese Entries of sailing vessels totalled 383 of 12,480 tons; of these 289 of 10,608 tons were Japanese.

INDUSTRIES.—In addition to the industries mentioned in the foregoing, Antung has an electric light plant, gas works, waterworks, the Okura Smelting Works, the Ando Silk Spinning Factory, Koyama Match-stick Factory, Takami Shipbuilding Yard, nine Japanese-owned sawmills, three Japanese-owned works for iron sundries and five for cleaning rice. During 1918 three Japanese shipbuilding companies were formed for the building of wooden sailing ships. The Yalu Shipbuilding Co. has its yards on the island opposite the Chinese city of Antung, while the Takami Shipbuilding Yard and the Nakamura Shipbuilding Yard are constructing vessels within the limits of the Japanese controlled territory on the northern bank of the Yalu River. Up to the middle of September seven vessels had been launched, and it was expected that two more would be completed before the river froze in November. The vessels built were from 300 to 700 tons deadweight, and were mostly of wood, one having auxiliary power. The vessels were built to supplement the steam traffic along the Manchurian, Korean and North China coasts.

MERCHANTS.—China Import & Export Lumber Co., Ltd.; Geo. L. Shaw; The Yalu Timber Co.



RIVER STEAMER, HARBIN

Harbin

Harbin is situated in the Kirin Province of Manchuria, in lat. 45 deg. 45 min. 30 sec., long 126 deg. 38 min. 28 sec. E., on the right bank of the Sungari River. The town owes its foundation entirely to the Chinese Eastern Railway, the construction of which had the object of connecting the Trans-Baikal railway with the Ussuri lines and so bringing European Russia into direct railway connection with the Pacific seaboard. The original scheme was, starting from Vladivostok. to construct a line parallel with the Amur River to join the Transbaikal line at Chita, and the late Czar of Russia laid the first stone at Vladivostok in May, 1891. The completion of this plan was abandoned owing to the many difficulties, geographical and economical, met with after the railway reached Kabarovsk, on the Amur. In its stead was brought forward the proposal to cross North Manchuria which, besides shortening the route, brought the Three Eastern Provinces of Manchuria into railway communication. After prolonged negotations an agreement was signed in August, 1896, between Russia and China by which Russia was enabled to lease the land required for a term of 80 years, at the expiration of which the railway and its buildings were to revert free of cost to China. The agreement also stipulated that China had the right of purchasing the railway as a going concern 36 years after its completion. It also stipulated that only Russians and Chinese could become shareholders, that China held the right of nominating the President of the Board of Administration, and that China undertook to guard the line. In 1897 Russia obtained the lease of Port Arthur and the Liaotung Pensinula for a term of 25 years, together with permission to extend the line from Harbin as far as Port Arthur.

It will be observed that Harbin is on the main line of the Chinese Eastern Railway, which connects Vladivostok with Europe, and is connected with the South Manchuria Raliways, which in turn form a junction at Moukden with the Chinese line to Tientsin and the connecting net of Northern Chinese railways

The further importance of the situation of Harbin and the other Russian-Chinese frontier stations in the group is understood when the remarks on preferential import duty treatment, given in the article on the Chinese Tariff and in the description of Antung, are considered.

The administration of the city of Harbin belongs to the Chinese Eastern Railway, in accordance with the treaty, part of which it transferred in 1908 to the Harbin Municipality, which includes Chinese members. It stands on 29,000 acres of leased ground, extending on both sides of the Sungari River with the railway bridge as its centre. Its population was estimated at 100,000 a few years ago, but with the political unrest in Siberia of the past two years it has grown vastly, the population fluctuating so rapidly that no definite estimate of its number could be given.

The Sungari is frozen over for nearly half the year; from April to October it is navigable to river steamers; it flows in a northeasterly direction and joins the Amur at Linkiangfu, the Amur reaching the sea at Nicolaevsk.

Commerce

In 1917 imports from the United States and from Japan appeared in enormous quantities. Leather, shoes, hardware,

foodstuffs, particularly coffee and sugar, and ready-made clothing, were the principal articles, though there was scarcely a line which was not active. The volume of trade of course had little reference to the normal Manchurian and Siberian market; it was destined nearly all for consumption in Russia, whose imports on the Western front had practically ceased. Practically the only limit to the quantities of merchandise that could be sold in Harbin was that imposed by the scarcity of railway cars. This was a serious question. The congestion of freight on the Russian railways, due principally to mismanagement of its rolling stock and to the great proportion of cars employed exclusively in the transportation of war munitions, greatly reduced the freight car allowance for shipments of ordinary merchandise. Where the Chinese Eastern Railway was unable in ordinary times to allot 300 freight cars for transhipment between its junction with the Japanese South Manchurian Railway at Changchun and the main line at Harbin, per day, the allotment was reduced to 20 cars per day. Freight rates increased to seven times the normal rate, and the scramble for a share in the 20 cars became a scandal. Preferred shippers were not those who applied the first, but those who were best provided with a bribe fund. The "squeeze" demanded for each car for the 142 miles from Changchun to Harbin varied from a thousand to five thousand roubles.

The exchange value of the rouble in the early months of 1917 hung fairly steadily between 3 to 4 roubles per gold dollar. Even the revolution in March and the entrance of the United States into the war, in April, did not affect it. Nor did imports visibly decline to any great extent. Exports of soya beans, wheat, flour, lumber and millet continued to find their way out in considerable quantities, despite the shortage in cars. Chinese cars carried large quantities to the South Manchurian Railway, and the Sungari River boats north to Siberian ports on the Amur. In spite of the restrictions on exports from Russia, enacted in 1916, considerable quantities of exports still dribbled through from Siberia.

On December 22nd, 1918, rouble exchange had fallen so low that 1,880 roubles were valued at only 100 Shanghai taels. Local rates had been considerably lower, even, than those quoted in the largér markets of the world: thus at a time when £1 realized 80 roubles at Harbin, 40 roubles would purchase a sovereign in London. This disparity is directly attributable to Russian restrictive legislation, enacted with a view to raising the value of the rouble. Heavy shipments of rouble notes were consequently made by speculators, and the new 1,000 and 250-rouble notes appeared on the market to supply the deficiency. As these high denominations were unpopular from the outset, were difficult to change, and were certainly too large for small transactions, the law of supply and demand asserted itself and the old notes went to a premium in the native markets, the new paper being quoted at one time as low as 23 per cent. discount. All the Russian silver and copper small coin disappeared presumably being bought up by speculators with a view to meltage, and were replaced by stamps and small notes of various denominations down to 1 kopeck, the hundredth part of a rouble. Some idea of the extraordinary currency conditions may be obtained from the statement that the value of a kopeck fell below that of a Chinese "cash," of which about 1.350 usually are worth a Mexican dollar. The sense of the value of money largely disappeared, giving a further impetus to speculation, which was already excessive. Cargoes of coffee, candles, leather and other commodities needed in Russia changed hands with startling rapidity and at progressively increased prices. Profiteers cornered the firewood market and the leather market; fortunes were made and lost in a day. The popular cafes became unofficial exchanges, where transactions of surprising magnitude were arranged over a friendly cup of coffee.

Then on June 5th, 1917, came the order from the Provisional Government at Petrograd prohibiting all exports from Russia. Immediately the value of the rouble began dropping, until September found the rouble worth about ten cents in gold, at which figure it has remained, with but few fluctuations (such as a drop to 5 cents in December), until the present day. The revolution of July completed the demoralization of the Railway so that when the new crops were harvested in the autumn they began to pile up in tremendous quantities at every railway and river station, where the great bulk of them still waited, at the end of the year, for transportation.

Import trade, however, still flourished for transmission to Russia, except in the case of articles considered as luxuries. Prices of all commodities, which had been steadily rising with the decreased purchasing power of the rouble abroad, now took a sudden flight and went even beyond the corresponding depreciation in the currency. As examples, shoes which had retailed from 60 to 100 roubles per pair now went up to 250 roubles per pair; firewood jumped from 80 roubles per 7 cubic feet to 300 roubles. House rents were multiplied from six to ten times the ordinary figure, and there were no houses or apartments to be had. Trade became no longer a competition between merchants for legitimate profits but a wild speculation.

One noticeable advance in the trade life of North Manchuria during this period has been that of the Chinese. Prior to the war Chinese business houses were practically excluded from Harbin and confined to the rather squalid Chinese city, sprawled along the Sungari River front, known as Fuchiatien. In 1917, however, the Chinese merchant had taken advantage of conditions suited to his genius and moved himself into the Russian city. Chinese names began to appear over the shops of considerable importance in the streets hitherto exclusively Russian or preempted by non-Russian foreigners, and at the end of 1917 the Chinese stores and business houses were almost as numerous as the Russian. Large numbers of Russian merchants emigrated to foreign soil, many of them appearing in Chinese treaty ports.

More important still, the Chinese Provincial authorities began to push the development of Fuchiatien. They constructed streets superior to those in the Russian city. They began the construction of a bund along the Sungari River front which when completed will swell by many times the present volume of the river traffic. Chinese emigrants came in thousands from the somewhat southerly provinces to share in the new prosperity They have settled in the rich river valleys to the north and east of Harbin and have already begun to swell the river trade.

The Chinese merchants in Fuchiatien and Harbin have taken over former Russian industries, principally flour mills, and have even begun circulating their own bank notes.

1917 Trade Statistics

IMPORTS OF FOREIGN GOODS.—The total gross value of foreign imports declined from 24,500,000 in 1916 to 11,800,000 in 1917, taking as a whole all the Harbin Group of Customs stations. For these startling figures the exceptional importation of locomotives and other railway supplies at Suifenho in the former year is primarily responsible, the comparative figures for the two years being: 1916, Tls. 13,761,460; 1917, Tls. 4,104,704. Foreign imports from Russia viâ Manchouli show a serious falling off of Tls. 3,721,000, or over 50 per cent., mainly due to the Russian embargo on exports. At Aigun the same conditions obtained, and accounted for a proportionate decrease of Tls. 82,000. At Suifenho, which records a decline—apart from the reduced importation of railway goods already noted—of Tls. 1,000,000, traffic difficulties were the main factor, for in other respects this office is not under the same disabilities as the other frontier stations in that the Russian embargo on exports does not apply to goods from abroad viâ Vladivostock, in transit to China through Siberia.

Re-exports of foreign goods rose from 4,430,000 to Tls. 14,600,000, and thus exceeded the gross import by nearly Tls. 2,000,000. At first glance these figures may occasion surprise, but the explanation lies in the very heavy carry-over from 1916, in which year there was an excess of gross imports over re-exports of Tls. 20,000,000. Manchouli claims the lion's share of this increase, or Tls. 5,500,000; but every station shows higher figures, especially Aigun, where, from the insignificant 1916 total of Tls. 17,700, re-exports in 1917 rose to over Tls. 900,000. Japanese cotton stripes jumped from 70,000 to nearly 2,000,000 pieces, and unenumerated cottons from 4,000 to 1,400,000 yards. At Manchouli the principal articles were cocoanut oil, cotton yarn, aniline dyes, coffee beans, leather, shoes, and haberdashery.

EXPORTS.—The total gross value under this heading amounted to over Tls. 36,000,000, or Tls. 1,622,000 less than in 1916. Every movement participated in the decrease, about one-half of which was on exports coastwise, the loss on shipments abroad being only Tls. 430,000, or 1⅓ per cent.

Suifenho easily leads the way amongst the Harbin group with Tls. 18,000,000, or one-half of the total. This sum was entirely on account of direct exports, whose transport offered little difficulty owing to the large number of empty cars returning to Vladivostok.

MERCHANTS.—Andersen, Meyer & Co., Ltd.; China American Trading Co., Inc.; Fearon, Daniel & Co., Inc.; Gets Bros. & Co., Inc., of the Orient; Jardine, Matheson & Co., Ltd.; Klemantaski, Bates & Co., Ltd.; Manchurian Co, Ltd.; Mitsui Bussan Kaisha; N. E. Wesyfield.

Aigun

Aigun is in the Heilungkiang Province of Manchuria, on the Amur River. It is important only as the entrepot for the trade of the Russian city of Blagovestchensk, which is connected with the Trans-Siberian Railway by a short line running northeast to Aleksandrovskoye. Aigun lies some 20 miles below the Russian city, on the opposite bank. Its foreign imports totalled Tls. 2,129,858 in 1917, of which Tls. 1,311,348 was re-exported. Its imports of Chinese produce totalled Tls. 1,090,164, of which Tls. 279,100 was re-exported.

A concession is now held by the Russians for the construction of a railway from Tsitsihar, a station on their existing line across Chinese territory, to Aigun. Its construction would open an avenue of trade of fair importance, when the trade of Aigun would undoubtedly expand considerably.

Vladivostok

Vladivostok, lying in lat. 43 deg. 7 min. N., long. 131 deg. 54 min. E., is the only Pacific Ocean gateway into Russia at the present time.

Within the confines of Vladivostok is comprised one of the finest harbors in the world. It is land-locked on all sides, has a clear and open entrance and one day will claim its position amongst the world's premier ports. Regular local services are offered by the steamers of the Osaka Shosen Kaisha, Nippon Yusen Kaisha and the Russian Volunteer Fleet to and from ports in Japan. The steamers of the Osaka Shosen Kaisha and the Russian Volunteer Fleet run regularly to and from Tsuruga on the west coast of Japan, affording through that port a direct and rapid connection with all cities in the Japanese Empire. The Russian Volunteer Fleet sends a special mail steamer every week to Shanghai, via Nagasaki, and a regular cargo steamer every week to eastern Japanese ports through the Inland Sea of Japan. The Nippon Yusen Kaisha maintains constant communication between Vladivostok and Korean ports, this line being extended through Korea to the Eastern ports of Japan, no European passengers being carried. In addition to the Shanghai and Tsuruga services, the Russian Volunteer Fleet maintains regular communication with ports in Kamchatka and the extensive Russian fishing grounds to the north of Vladivostok. Ocean services are maintained from Vladivostok to the Black Sea by steamers of the Russian Volunteer Fleet, but this service is suspended owing to the war. These steamers also run to Victoria and Vancouver, but not with any great regularity. The mail service via Tsuruga and Shanghai, already referred to, affords passengers every facility for reaching other parts of the globe, as also does the Trans-Siberian Railway, Vladivostok being the Siberian terminus of this line.

The port is situated on Muravieff Peninsula, on the Gulf of Peter the Great, and the harbor consists in Amur Gulf, from 5 to 13 fathoms, and the Usuri Gulf, 13 to 20 fathoms. The quays of which there are at present two excellent ones, are located on the Golden Horn, four miles long and nearly one mile wide. The government is carrying on considerable new work, and will eventually make this one of Russia's greatest ports. The harbor is ice-bound for three months, but ice-breaking vessels keep it open to commerce. All of the trans-Pacific steamship lines are represented. This is the home port of the Volunteer fleet, comprising 32 modern vessels. Direct rail connection is held with Petrograd and all Russian and Chinese points. Petrograd is distant 8,390 miles.

PILOTAGE.—Pilots may be obtained at Skrybloff Island, five miles outside the harbor, in the summer, provided the time of vessel's arrival is known, otherwise either at Ulysses Bay or outside the harbor. Rate from Skrybloff, roubles 75.00, and Ulysses Bay, roubles 60. In winter pilots will not go outside the harbor. Charge for berthing, roubles 35.00.

There are two drydocks at Vladivostok, which will take vessels up to 560 feet length, 90 feet beam and 28 feet depth. The shipyards shops do not take work from private owners. Charges for the use of drydocks are about 24 copecks (about 12 cents) per gross ton for the first three days, and 5 copecks (about 2½ cents) for each additional day for vessels over 4,250 tons.

There are also special port dues and customs dues on different commodities.

Port Charges.—Tonnage dues, 30 cop. per net reg. ton. Other chargs, wharfage Ro. 50 for vessels up to 300 feet and Ro. 7 for each additional 50 feet; mooring Ro. 15.

Stevedoring.—Rates for loading cargo, owing to increased and increasing wages and expenses, unable to give any definite information at present. Lighterage, cost per ton, 3 to 5 Roubles per freight ton. Lighterage cost per lighter per day, from Ro. 25 to Ro. 200 per day. Crews' wages extra.

Accommodation.—Depth of water alongside wharves, 28-30 feet; rise and fall in summer 1 foot, winter 2 feet; 5 wharves available for discharging railway material; 8 wharves for loading beans and bean cake, and discharging light cargo such as barbed wire, etc.; 3 pontoon wharves for discharging ammunitions; 4 wharves used for steamers on the Japan Mail service, when vacant can be used for vessels with general cargo; 2 new wharves being built, probably for discharging railway material.

Names of Importing and Exporting Firms: Bryner, Kousnetzoff & Co., Mitsui & Co., Choorin & Co., Sterelny & Co., Grusko Tschernego, Gaston, Williams & Wigmore.

Steamer Lines Using the Port: From New York via Panama Canal, American & Asiatic S. S. Co., American Manchurian Line, American & Oriental Line, Barber Line, A. Holt & Co., Nippon Yusen Kaisha; from Vancouver, Canadian Pacific Ry. Co.; from San Francisco, Robert Dollar Co.; from Japan ports, Nippon Yusen Kaisha and Osaka Shosen Kaisha; from English ports, Glen and Shire lines; Pacific Coast ports, Frank Waterhouse & Co.; from Japan, China and Coast Ports, R. V. F.

Consular Representation: France, Great Britain, Holland, Japan, China, Norway, Sweden and United States.

Dues.—Steamers only pay tonnage dues of 30 cop. per ton; other dues are payable by consignees.



VIEW OF VLADIVOSTOK

Hangchow

Hangchow, the capital of Chekiang Province, is situated 120 miles southwest of Shanghai and 110 miles south of Soochow, on the Chien-Tang River, at the apex of a bay which is too shallow for the navigation of steamers. The mouth of the river is, moreover, periodically visited by a bore, or tidal wave, which further hinders navigation. Hangchow is the southern terminus of the Grand Canal, just as Tientsin is the northern terminus.

Hangchow is famed as a manufacturing centre, and for its historical interest and scenic beauty. Its three great trades are silk weaving, the manufacture of scissors, and the making of tinfoil. The port was declared open to trade on September 26th, 1896. Its native population is estimated at 600,000, but the foreign population is insignificant. The foreign settlement extends for half-a-mile along the east bank of the Grand Canal, some miles distant from the native city.

Hangchow has enjoyed from early times the honor of being the centre of production of high-grade silk fabrics. The products of the Hangchow looms are noted both on account of their durability and high finish. Within the city walls there are about 2,000 weaving shops, employing about 10,000 looms and 6,000 operatives.

One of the sights of Hangchow is the famous West Lake, dotted with islets crowned with shrines and memorial temples and spanned by causeways joining island to island. The general effect is heightened by temples, pagodas and monuments, while the slopes of the hills bordering the lake are bright with flowers. The western wall of the city has been removed to make a promenade along the lake.

Hangchow enjoys excellent water and rail connection with important markets.

COMMERCE AND INDUSTRY.—Imports of foreign goods in 1917 amounted to Tls. 5,741,107, and imports of native goods amounted to Tls. 3,931,253. Exports of native goods in the same period aggregated Tls. 11,348,472. The principal exports, most of which reach outside markets by way of Shanghai, are given in the following table:—

Paper fans	5,619,142	pieces
Hams	2,284	piculs
Hemp sacking	163,075	pieces
Samshu (native wine)	27,224	piculs
Rape seed	124,387	,,
Rape seed cake	199,401	,,
Raw and manufactured silk and cocoons and waste	13,490	,,
Tea	144,144	,,

The industries in foreign style at Hangchow are as follow:

The Tung Yik Cotton Mill.

The Ta Yu Li Electric Co. (Chinese), capacity 2,500 lamps. (In the neighboring city of Huchow is the Yang Ming Electric Light Co. with a capacity of 5,000 lamps, and at Kashing the Wu Hsing Electric Light Co., with a like capacity.)

Kuan Hua Match Factory, daily output 20 cases of 7,200 boxes.

Three rice hulling and cleaning mills, the Ta Yu Fen, Hung Yu, and Yuan Chang, with capacity of 1,500, 800 and 700 piculs a day, respectively. The first two are equipped with German, and the last named with American machinery.

The Hangchow Telephone Co., with German equipment, 1,200 telephones in use.

TRANSPORTATION FACILITIES.—Steam launches ply regularly to and from Shanghai and Soochow with cargo and passenger boats in tow. The steamer lines in the Hangchow Shanghai and Hangchow-Soochow services are the Tai Sun Chong, the China Merchants' Inland Steam Navigation Co., the Ninshao Company and the Nisshin Kisen Kwaisha. Communication is held with Shanghai by the Grand Canal, which intersects the Whangpoo River, on which Shanghai is situated, at Kashing. A vast junk trade goes up the Chien Tang River and via other waterways.

Entrances and clearances in 1917 aggregated 7,437 vessels with a tonnage of 320,706.

The Shanghai-Hangchow-Ningpo Railway operates a good service between Hangchow and Shanghai, 157.8 miles, and a section is now being built from Ningpo which eventually will connect with the Hangchow-Shanghai line.

An example of the effect of internal taxation on trade routes is shown in the cost of shipping tea to Shanghai by rail and boat. To encourage the use of the railway, shipments to Shanghai by rail do not pay likin, but a tax in a lump sum, known as "t'ung chuan," at Shanghai. Although the charge for shipment of a case of tea by rail from Hangchow to Shanghai is $0.22 per case, it is more economical than paying the launch rate of $0.06 per case as the latter course would entail the payment of high likin or Customs charges. Due to Customs treatment, goods destined for points beyond Shanghai can profitably be sent by launch; therefore the traffic is divided into goods for consumption in Shanghai, which are shipped by rail, and goods for transhipment beyond Shanghai, which are carried by launch.

Ningpo

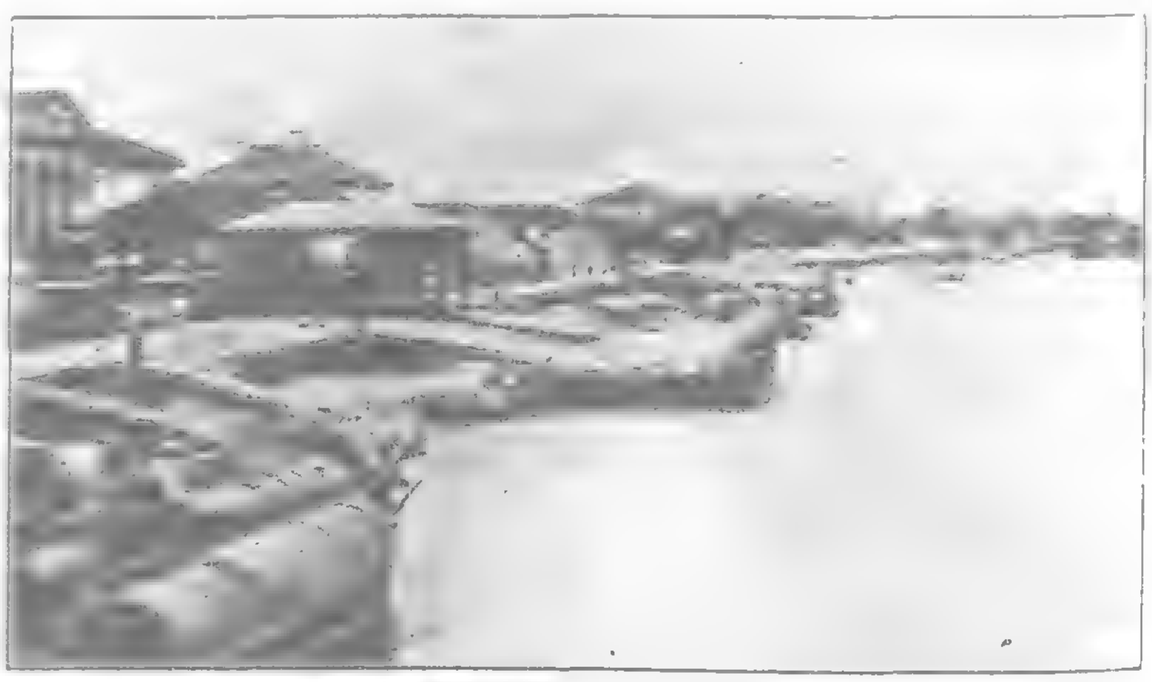
Ningpo, in Chekiang Province, 13 miles from the sea on the River Yung, is one of the five Chinese ports thrown open to the trade of the insistent foreigner in 1842. Trade with Japan had been carried on through Ningpo some centuries before, and the port had been visited by the Portuguese, who founded a settlement as early as 1522. In 1542 their settlement was besieged by Chinese troops and of the 1,200 Portuguese residents 800 were massacred. History records no further attempts at trade with the port until the early years of the 18th century, when the East India Company established a factory on Chusan Island, about 40 miles distant, but this was abandoned after a few years, due to the hostility of the natives. In the war between Great Britain and China the British fleet occupied Ningpo on October 13th, 1841, and a British garrison was stationed there. In 1842 the Chinese unsuccessfully attempted to retake the city. On May 7th of the same year the place was evacuated by the British, and the port was thrown open to foreign trade in the same year.

During the early years of the foreign trade which was established after the opening of the Chinese "Cinque Ports" there was considerable doubt whether Ningpo or Shanghai would be the chief emporium; but the extreme conservatism of the Ningpo trade guilds led to the abandonment of the port by the foreign merchants and the selection of Shanghai, with its superior advantages, as the chief port. The opening of Wuhu and Hangchow to trade thereafter restrained Ningpo's development. To-day Ningpo is dependent upon Shanghai for its foreign trade and for a great deal of its local trade. Occasionally a Japanese coaster, or a ship to or from Hongkong, puts into the port; otherwise Ningpo relies upon the two regular daily sailings to Shanghai. It exports beans, rice, tea and cotton, fish, salt, stone, paper, rush hats for foreign markets, matting, pewterware and native furniture.

Ningpo is a walled city. Its population within the walls is about 465,000. Foreigners occupy a site on the north bank of the river.

Ningpo serves with native junks and steam launches a section of the province which is filled with industrious people who have fair purchasing power, and for this reason its trade has usually been of satisfactory size. Industries in the foreign style have not flourished: two cotton mills did not succeed (one having been destroyed by fire in 1917), and these were followed by a flour mill and a candle factory, the first of which closed and the second of which is not particularly prosperous. The port has an electric light plant. A railway is under construction which will link the port with the line from Hangchow to Shanghai.

Ningpo rush hats are made by hand in small shops and homes. The product finds its eventual market in France, for the



THE BUND AT NINGPO

most part, although the United States is a large buyer as well. In 1912 nearly 12 million hats were shipped away, but in 1917 the trade declined to 1½ millions. This was due in part to high freight rates and lack of shipping space, but the greater part of the decline can be attributed to an experiment of the producers in the preceding year for saving material by weaving the hats loosely. As a consequence large quantities were refused, and are on the hands of the middlemen in Shanghai, Ningpo and in the United States. An experiment was made in weaving hats of wood shavings, but this trade has also declined seriously.

Another Chinese device which has not worked very well in Ningpo is the "transfer dollar," an imaginary and highly variable unit that has not even a conventional value assigned to it and bears no fixed relation to any existing currency. Payments in the city are made by native bank drafts in "transfer dollars," and these are settled through a sort of clearing house. The value of the "transfer dollar" varies several times a day, and apparently the changes in valuation are notified by word of mouth which passes quickly through the markets; if the transfer dollar is so cheap that one-and-a-half of the units are worth a dollar in real silver, the seller merely charges $1.50 "transfer money" for goods valued at a dollar in hard silver. Opinion is divided as to the advantages of the scheme, but to the average foreigner it appears only as a nuisance that is maintained because it was started. Perhaps it adds interest to trading that would otherwise be dull—it seems to infuse a new element of excitement and confusion in the differences of opinion between the buyer and seller which always bring about long haggling.

COMMERCE AND INDUSTRY.—Thanks to the excellent standardization of the medium of exchange used by the Customs, it is possible to announce the imports of foreign goods in 1917 in Haikwan taels—the satisfactory total of 9,388,309; while imports of native goods were Tls. 5,035,134. Exports in the same period were Tls. 10,684,080.

Imports included the conservative Ningpo requirements of piecegoods to the extent of 688,000 pieces. Tin in slabs, used principally for the manufacture of mock silver taels for burning at funerals and at religious ceremonies, totalled 21,514 piculs. Cigarettes made a sharp advance over the normal purchases with a valuation of Tls. 1,359,417, although this is less than the previous record, made in 1916, of Tls. 1,903,996.

MERCHANTS.—Butterfield & Swire; Hudson & Co.

Santuao

Santuao was voluntarily opened to foreign trade by the Chinese Government on the 8th May, 1899. The port includes the whole of the magnificent Samsa Inlet, which is situated some 70 miles North of Foochow. The foreign settlement is on the island of Santu in the centre of the Inlet. The harbor is certainly one of the finest on the China coast: the approaches to it are well-defined, and vessels of the largest size may enter at any time, regardless of the state of tide. H.M.S. *Waterwitch* surveyed the whole of the Inlet in 1899, and an Admiralty chart has been published. A telegraph cable was successfully laid from the mainland to the Settlement in July, 1905, and communication established with all China ports.

The port of Santuao serves important tea districts. Much of the tea exported from Foochow to Europe is first shipped from Santuao; and there is a growing demand in North China for certain varieties grown in the neighborhood. The chief towns of the district are Funing, Fu-an, Ningte, and Shouning. There is a prosperous and increasing junk-trade, and regular steamship communication with the provincial capital.

The trade of the port in 1917 was as follows:—

Imports of foreign goods	Tls.	269,350
Imports of Chinese goods		192,244
Exports of native produce		2,040,968

The principal exports are live goats and pigs, tea, bamboos, camphor, camphor oil, rice, firewood, tea oil, bamboo, oysters, paper, sweet potato cuttings, pottery, tea dust and siftings and leaf tobacco. Exports of tea in 1917 were as follows: Congous, 41,869 piculs; orange pekoes, 234 piculs; green, 65,238 piculs; siftings, 1,491 piculs. "Sweet potato cuttings" are sliced sweet potatos, the food of the masses. Exports in 1917 totalled 17,142 piculs. In 1917 the price ranged from Mex. $1.70 to $2.40 for a picul.

While the 1917 trade was some Tls. 400,000 less than that of 1916, the total was generally up to the average trade of the port.

The port of Santuao itself is considered to offer a likely field for foreign energy combined with capital. It possesses a deep-water harbor, well sheltered and accessible to steamers at all times. Land and labor alike are cheap and plentiful; building materials cost less than anywhere on the coast of China; and the soil is extremely fertile. In the vicinity of the port are extensive deposits of kaolin of excellent quality; lead is worked nearby; and copper and antimony are understood to exist in paying quantities.

Steamer entries and clearances in 1917 totalled 426 of 70,264 tons (of which 422 of 67,192 were under the Chinese flag); sailing vessels totalled 593 entries and clearances of 76,576 tons; and launch entries and clearances totalled 21 of 3,897 tons.

Prior to the war the Chinese Government entered into a contract with an American firm for the construction of port facilities of modern character, but owing to Japanese opposition the transaction was not consummated.

MERCHANTS.—Bradley & Co., Ltd.; Butterfield & Swire; T Carr-Ramsey; W. G. Humphreys & Co.; Jardine, Matheson & Co., Ltd.; Lee Brothers & Co.; E. V. S. Lim & Co.; Alex. Ross & Co.

Foochow

Foochow, the capital of Fukien Province, lies on the Min River, 34 miles from the sea, in lat. 26 deg. 20 min. 24 sec. N. and long. 119 deg. 20 min. E., about midway between Shanghai and Hongkong. Foochow is nearly opposite Tamsui, in Formosa, with an arm of the sea between. The foreign settlement is on the opposite side of the river from the native city. Between the native city and the foreign settlement is a small island in the stream which serves as a base for an ancient stone bridge, which connects the settlements.

The Chinese population of Foochow is estimated at 800,000, and the foreign population numbers about 400. The climate of the region is temperate. The best season extends from November till the middle of January, when the weather is generally clear and the temperature mild. Between the middle of January and April comes the rainy season, followed by four hot months. The winter season is never very cold, the mercury registering about 42 degrees, with scarcely more than ten frosty nights.

Due to the shallowness of the Min, steamers anchor at the Pagoda Anchorage, 9½ miles below the city, passengers for Foochow being transferred by launches and freight by lighters. The Chinese Government has an extensive arsenal near the Pagoda Anchorage, where several good-sized gunboats have been built There is a dock, over 300 feet in length, equipped with powerful pumps and a good steel caisson, in connection with the arsenal.

The scenery surrounding Foochow is described as most beautiful. In sailing up the Min from the sea, vessels have to leave the wide stream and enter Kimpai Pass, which is barely half-a-mile across, and enclosed as it is by bold, rocky walls it presents a striking appearance. Another pass, the Min-ngan, is narrower, and with its towering cliffs, surmounted by fortifications and cultivated terraces, is extremely picturesque The territory abounds in ravines and mountains, the home of much game, while tigers and panthers are common in the more remote hills and some of these beasts have been killed within ten miles of the city. A mountain resort about nine miles east of Foochow, at the top of Drum Pass, can be reached by a ride of four hours in a sedan chair. The settlement is about 2,900 feet in height. The mountain paths are the greatest charm, and nearly five miles of paved paths about three feet in width have been laid down by a committee of residents with funds provided by voluntary contribution. The thermometer averages about 10 degrees cooler here than in Foochow; cool nights make blankets a necessity for comfort.

TRADE AND INDUSTRY.—In 1917 imports of foreign goods into Foochow aggregated Tls. 5,399,533 while imports of Chinese produce amounted to Tls. 6,318,220, of which Tls. 3,372,057 was re-exported. Adding to this figure the exports of Chinese produce of local origin, the total exports were Tls. 6,877,573.

Shipments to foreign countries consist almost entirely of tea, camphor, egg albumen, feathers, lacquer ware, and molybdenum. Exports to Chinese cities are timber, paper. bamboo shoots, olives, oranges, camphor oil, molybdenum, and tinfoil. The major portion of the export trade is shipped to Hongkong for transhipment. The natural products of the district are coal, iron, copper, gold, lead, zinc, molybdenum and timber, but most of the mines are undeveloped. Instead of being an exporter of its mineral products, the province imports metals and minerals annually to the value of about Gold $300,000. The demand is for pig lead, slab tin, tinned plates, quicksilver, iron and steel angles, bars, wire, hoops, pipes, rails, sheets and plates, galvanized sheets, brass and copper, and these products are purchased in Shanghai and Hongkong.

The principal export from Foochow is tea. The trade in 1917 amounted to Gold $8,300,000, and this represents a decline of about 25 per cent. in comparison with 1916. The stoppage of tea importation into England, the scarcity of tonnage, and the high rate of exchange account for the decline.

Wooden poles for native use form a large part of the junk trade to Formosa, Shanghai, Ningpo and Tientsin, the value of the exports reaching about Gold $2,000,000 in 1917. The forests are being exhausted; the 24-inch timber has now almost entirely disappeared and it is becoming difficult to obtain the 18-inch size.

Native paper was produced in 1917 to the value of Gold $1,800,000, while the export of tinfoil was valued at Gold $513,000, most of the latter going to Kiangsi Province by overland route.

Importations of sundry goods into Foochow totalled nearly Gold $3,000,000 in 1917. Japanese merchants secured much of this business through the favorable position in which Japan was placed by the war and by trading direct with the native merchants, instead of doing business with the port through Shanghai and Hongkong.

Seven native factories for the production of foreign-style soap are in operation in the port. About 21,000 boxes of 72 twin bars were produced during the year. Several factories are engaged in the condensing and tinning of buffalo milk for native consumption. The 1917 output amounted to 150,000 tins. A brick factory is also in operation. The planting of sugar cane is rapidly taking the place of poppy cultivation.

One of the chief industries of Fukien Province is the manufacture of salt by evaporation of sea water. The trade is a Government monopoly, and no mention of it is made in the Customs figures given above, as its taxation and sale are regulated by a separate organization, the Salt Gabelle. Total shipments from Fukien Province amounted to more than 66,000 tons in 1917.

Prior to the war a large importation of artificial indigo reached the port from Belgium, France and Germany, and its cheapness practically destroyed the native industry of vegetable indigo manufacture. As no fresh stocks have been imported lately, the price of the commodity rose sharply until it was possible once more to manufacture native indigo at a profit. Native indigo has now regained the trade, and during 1917 about 300,000-lbs. were imported into Foochow.

The port has an electric light plant and a telephone service, both of which are flourishing. The electric plant consists of two 1,000-kilowatt machines, operated by steam turbines, and a third set of the same description has been ordered from Japan. The rate for current is Mexican $0.30 per unit, and the subscription fee for a telephone is Mexican $60 per year.

Many new enterprises have been planned for Foochow, including railways, dockyards, mines, banks, and commercial projects, but all are held up for the present by lack of funds and by the uncertainty of the political situation. As soon as conditions are again normal this rich province (Fukien), which is about 38,500 square miles in area, with a population of 28,000,000, should offer great opportunities to foreign trade. The people are coming to realize the value of modern ideas and are eager to go ahead, the only thing needed being foreign aid. However, it is doubtful if there will be any real advance in construction work or trade until conditions are more nearly normal, which will probably be in less than a year.

The climate here is semi-tropical, and there is no ice or snow in winter. Exporters should bear this in mind and not waste time and money seeking a market here for heavy clothing, knitted goods, and heating appliances. The two ice-making plants work the year round. There is also no market here for automobiles or any other kind of vehicles. as the roads consist practically of stone steps up and down hill. The electric light plant is proving a great success and is an incentive to other enterprises.

TRANSPORTATION FACILITIES.—Neither railways nor roads exist. Waterways are used wherever possible; overland trade is done by coolies, and pack animals are not employed Numerous junk and launch services run to nearby sea and river ports. The steamer lines calling at the port regularly are: China Merchants S. N. Co., Osaka Shosen Kaisha, Foochow to Shanghai; Douglas S. S. Co., Ltd., Foochow, between Foochow, Amoy, Swatow and Hongkong; occasional, Indo China S. N. Co, Ltd., Ocean S.S. Co., China Mutual and P. & O. In 1917 1,310 vessels were entered and cleared, with a total tonnage of 642,550.

HARBOR FACILITIES.—There is no wharf accommodation. Vessels discharge and load in the stream at Pagoda Anchorage. Pagoda Anchorage, recognized as the "Port of Foochow" and situated some 9½ miles by river below and coast-wise from the city of Foochow, is the limit beyond which the Min is unnavigable except for vessels of small dimensions. All ocean-going and coasting steamers have, therefore, to discharge and load at Pagoda Anchorage, which is distant some 15 miles from Sharp Peak, the entrance to the Min River. The lower river is very narrow in parts and, as the sand banks are continually changing, requires very careful navigation. It is not advisable for heavy draft steamers to call at Foochow (Pagoda Anchorage) without first consulting agents as to the water conditions in the lower river.

TIDES.—It is H. W. F. and C. on the bar of Min River at 10h. 27m.; spring rise 20½-ft., neaps rise 16-ft., neaps range 10½-ft. The highest tide is on the day of full and change. The flood stream commences to run to the westward 4½ hours before high water and sets in towards Sharp Peak from the northeast; the ebb to the eastward 1½ hours after high water, except during freshets, when it begins earlier and runs for a much longer period, it makes out from the southwest. Morning tides are always as a rule, higher than the night tides throughout the year.

During rainy season, April, May and June, the flood stream runs short and the ebb correspondingly longer. During heavy freshets vessels do not swing to the flood tide.



GENERAL VIEW OF FOOCHOW

(hanges in the depth of water at Pagoda Anchorage are frequent. A large bank, drying at 9-ft., commences at Losing Island just below the Pagoda extending eastward towards Watter's Rock for two-thirds of the width of the river, then curves in a northerly direction. Another bank commences to the southwest of Niuta Rock, and extends southwestward towards Losing Island for about a mile.

PILOTAGE.—Compulsory for home-going and advisable for occasional callers. Not compulsory for regular callers.

PORT CHARGES.—Tonnage dues, 4 mace (Haikwan) per register ton per quarter. Customs, night permits, week days, 6 p.m. to midnight Hk. Tls. 10, 6 p.m. to 6 a.m. Hk. Tls. 20; Sundays and holidays, double fee.

STEVEDORING.—Rates for loading tea, 15-16 cents per ton for home-going steamers; coasters, various as per private arrangement. Rates for discharging cargo, various as per private arrangement. Lighterage, 20 cents per package on unclaimed cargo, other cargo taken delivery of by consignees under private arrangements. Lighterage, cost per lighter per day, $20.

MAMOI DOCK.—There is a drydock in connection with the Government arsenal, situated about a mile from the Pagoda Anchorage. The dock is 328 feet in length, 70 feet in breadth at entrance, 20 feet depth on sill, and has modern equipment. However, the entrance is silted up and a ship of more than 10 feet draft could not enter without preliminary dredging.

HARBOR IMPROVEMENTS.—The Whangpoo Conservancy Board, of Shanghai, have proposed a plan* for producing a minimum depth of 10 feet at low water—which means, at high water of ordinary spring tides 16-18 feet in the upper reach and 22 feet in the lower range—into the port of Foochow City which would mean unhindered navigation at any time of the day or night for coasting steamers, tugs, launches, lighters and junks up to 9 feet draft and would enable steamers of up to 16 feet draft to enter or leave twice a day with the help of the tide. The plan proposes the institution of a River and Harbor Board and the imposition and collection of a tax on trade, say up to 10 per cent. of the Customs dues and shipping, and the arranging of a loan to have the work done in 3 years, a plan which the history of other Chinese ports has shown to be feasible.

Practically speaking, all oversea navigation now stops at Pagoda Anchorage, 9½ miles below Foochow, and from there cargo and passengers are taken by junk or steam launches drawing 4 to 8 feet, which can only ascend the river at half or high tide. The approaches to Pagoda Anchorage from the sea have several bars, shoals and crossings with a least through depth of 11 feet at low water, which limits the draft of ships to, say, 25 feet at high water.

Approaching the Port of Foochow from the sea by the deeper North Branch, the first obstacle to navigation for a ship of, say, 24 feet draft is the Outer Bar. It is a widespread shallow formation of the usual type and has at least 14 feet at ordinary spring low water and 28-30 feet at ordinary neap high water. The next obstacle is the Inner Bar, situated south of Sharp Peak Island, and has only 11 feet at ordinary spring low water and 25-26 feet at ordinary neap high water.

The northern projecting point of Wufu Island forms the Kinpai Pass, some 1,300 feet wide, and immediately above it the passage north of "Middle Ground" gives only 14 feet in the fairway at L. W. O. S. T. and about 26 feet at H. W. O. N. T. although there is a deeper but very tortuous south passage. Projecting from Wufu Island is the Wufu shoal, with some 16-20 feet at low water ordinary spring tides at its southern extremity and 28-32 feet at H. W. O. N. T.

At Spiteful Island Passage the river broadens out to a wide stretch. The shoals near Spiteful Island limit the depth of the fairway to only 10 feet on the western side and to 14 feet on the eastern side at L. W. O. S. T. and about 21 to 25 feet respectively at H. W. O. N. T.

The lower end of this wide reach forms the comparatively wide and deep Pagoda Anchorage. Immediately above the Anchorage is the lower junction of the North (Foochow) Branch and the South Branch of the main river, which enclose and form Nantai Island. Both branches are full of banks and crossings. In the Foochow Branch the maximum depths vary from 2½ to 6 feet in the fairway at low water. In the Southern Branch, which is not so frequented by navigation, several shallow places yield barely one foot at low water in the dry season.

The rise of high water at ordinary neap tides above the ordinary low water of spring tides is 14 feet at the Outer Bar, 11.6 feet at Pagoda Anchorage, and 6 feet at Foochow, varying proportionately at intermediate points.

The bridge at Foochow City obstructs navigation for everything but boats with removable masts and small launches. The depth at low water is about 3 feet in the actual opening under the bridge, but it is quite deep (20-30 feet) above and below.

At present only native small craft, junks, launches and small coasting steamers (150 tons) of 6-8 feet draft can come up to the port of Foochow. Only the Pagoda Anchorage gives Foochow the rank of a seaport, by serving as a harbor for ships up to 27 feet draft, at springs, and 24-25 feet any day in the year. As this gives Pagoda Anchorage the status of a port of the second class, the development of the river above the Anchorage for the passage of lighters of good capacity should enable Foochow to hold its own as a second or third-class modern ocean port amongst the other ports on the Chinese coast from Shanghai to Hongkong.

While it would not be impossible to develop the river up to Foochow city to a depth of 20-24 feet at low water, or even more, its cost would not be profitable on the present trade of Fukien Province. Such development rests on the future of the Province. Perhaps with the building of a railway through the valley of the Min the commercial interests of Foochow might gradually transfer the centre of the trade to Pagoda Anchorage, but there is no indication of such a move. As for a local railway, it appears that the cost of deepening the stream from the Anchorage to Foochow city would be less than the cost of constructing a railway between the Anchorage and the city, and the waterway would provide the most economical transportation.

The plan for producing a minimum depth of 10 feet would enable the passage of coasting steamers of 16 feet draft to enter the city anchorage at neaps, the rise of which is at least 6 feet. By thus having 10 feet at low water and at least 16 feet at all high waters (springs or neaps) Foochow anchorage will offer facilities to coasting steamers up to 16 feet draft as well as all junks and tugs and lighters connecting with deep-water ships lying at Pagoda Anchorage.

The cost of the scheme, aside from engineering staff and administration expense, would be but $618,000, to which would be added $75,000 for plant, $135,000 for engineering and administration expenses, and $72,000 for miscellaneous expenses, making the grand total but $900,000 Mexican. To defray this expense a tax of 5 per cent. on Customs duties, a Government grant of Tls. 12,000 yearly, and a special tax on junks and steamers yielding Tls. 10,000 yearly are proposed, with a yearly yield of Tls. 60,000 or approximately Mex. $90,000.

On December 27, 1918, the Diplomatic Corps at Peking, approved a scheme of improvement and recommended it to the Chinese Government for adoption.

MERCHANTS.—Bathgate & Co.; Brokett & Co.; Butterfield & Swire; Dodwell & Co., Ltd.; John Gittings & Co.; M. W. Greig & Co.; Jardine, Matheson & Co., Ltd.; Mitsui Bussan Kaisha, Ltd.; Odell & Co.; R. Turner & Co.; Westphal, King & Ramsey, Ltd.; T. M. Wilkinson & Co.; Robert Anderson & Co., Ltd.

* See FAR EASTERN REVIEW, January, 1919, for fuller details.

Amoy

Amoy is one of the oldest ports open to foreign trade. The native city is situated on Amoy Island, at the mouth of the Dragon River, in Fukien Province, lat. 24 deg. 40 min. N. and 118 deg. E., 293 miles north of Hongkong and 636 miles south of Shanghai. The foreign concession is the small island of Kulangsu, lying about one-third mile from the native city, which was ceded by China as an international settlement in 1903. Kulangsu, which forms the western side of the harbor, is about 3 miles in circumference. Kulangsu has an electric light plant, a sewerage system, an ample supply of good drinking water, and is well governed by an international commission, while the native city of Amoy is the ordinary type of Chinese city.

Amoy harbor is one of the best on the China coast. There is good holding ground in the outer harbor and vessels can anchor in the inner within a short distance of the beach, with perfect security. In 1908 the harbor easily accommodated the United States Navy fleet at anchor.

At one time Amoy was the centre of the tea trade, but it has been replaced in this industry by the ports of Formosa. Exports from Amoy in normal times are of comparatively little importance, being only about an eighth of the average imports. The astonishing excess of imports over exports is made possible by the large amount of silver sent into the Amoy district each

year by laborers who have emigrated to the Straits Settlements and other countries in the East Indies and Malaysia. This importation of silver usually amounts to about Tls. 18,000,000 annually, but lately the amount has decreased because emigrants working in gold standard countries have been affected by the high price of silver, which has naturally limited their homeward remittances.

A railway reaching from the mainland directly opposite Amoy, about 3 miles distant, to the populous city of Changchow, is now under construction and about two-thirds of the line, which will have a total length of 30 miles, is open to traffic. Frequent and regular steamer communication is maintained with Hongkong, Swatow, Foochow and Formosa, and steamers run direct to the Straits Settlements and to Manila. Amoy has always been a centre of junk traffic, and the trade is still carried on. Steam launches towing native passenger and cargo-boats also handle a large trade with nearby cities.



AMOY—THE FOREIGN SETTLEMENT OF KULANGSU. NATIVE CITY IN BACKGROUND

Amoy is in a territory believed to be unusually rich in minerals. A foreign engineer who made a survey for a Chinese syndicate in 1906 and 1907, in the Anki district of Southern Fukien, reported the existence of valuable deposits of coal, iron, galena, zinc blende and kaolin, as well as a solid deposit of magnetite iron ore, estimated at over 10,000 million tons. Rich coal seams here are worked only by native methods. In the Lungyenchow district anthracite coal seams, varying in thickness from 3 to 9 feet, are exposed to view in every direction, and rich iron beds extend far and wide. As in the Anki district, these mineral deposits are worked by the most primitive methods and yield very little. Exploitation of such valuable fields must await railway communication with the seaboard.

Among the industries might be mentioned two canning factories, packing fruit and other Chinese products for sale to emigrants in distant countries. There are a number of native hongs engaged solely in transmitting funds from Fukienese emigrants in the Dutch East Indies and other countries, and others whose business is to advance funds for the traveling expenses of laborers bound for the plantations in the South. The annual outflow of labor is estimated at 65,000 persons, and of these about 50 per cent. eventually return, many of them decidedly prosperous. Some of the finest edifices on Kulangsu are owned by the descendants of emigrants who made fortunes in the South.

Amoy enjoys a warm climate, snow and ice being scarcely ever seen. Summer begins in May and ends in October, and although extremely hot in the native city the temperature on Kulangsu rarely rises above 90 degrees.

In 1917 the foreign population of the Amoy district, according to the Customs statistics, was 3,885, including 3,154 Japanese, 423 British, and 158 Americans. The Chinese population of the port is given as 114,000. Of the 396 foreign firms in 1917, as compared with 260 in 1916, 310 were Japanese, 48 British, 18 French, and 9 American. The foreign residents and firms include persons of Chinese origin or descent who are citizens, subjects, or protégés of the nationalities indicated.

COMMERCE AND INDUSTRY.—Agriculture is the principal industry of the district, but the products of this industry are not sufficient for home consumption. Foreign and Chinese goods are annually imported to the extent of about $12,000,000, against an export of native goods of about $2,500,000 worth of articles intended principally for Amoy Chinese overseas.

In terms of gold currency the total value of the net trade of the port in 1917 shows an increase of $457,169 over 1916; but considered in haikwan taels the trade fell off by Hk. Tls. 3,000,000, or approximately $3,060,000 gold currency. The discrepancy is accounted for by the fact that in 1916 the haikwan tael was worth $0.8238 gold currency, and in 1917, with the high value of silver, it was worth $1.02.

The statistics of Customs revenue show a reduction of Hk. Tls. 72,000 (approximately $73,440), or about 15 per cent., as compared with the statistics for 1916.

The following table gives a summary of the export and import trade of the port in 1916 and 1917:

Imports and exports	1916	1917
Imports of foreign goods:		
From foreign countries and Hongkong	$7,033,880	$3,163,218
From Chinese ports	285,400	474,131
Total	7,374,280	8,637,349
Re-exports of foreign goods:		
To foreign countries and Hongkong	338,016	394,439
To Chinese ports	294,669	231,285
Total	632,685	625,724
Net total foreign imports	6,741,595	8,011,625
Imports of Chinese products (chiefly from Shanghai, Newchwang, and Chefoo)	5,368,650	4,482,191
Re-exports of Chinese products:		
To foreign countries and Hongkong	259,002	160,089
To Chinese ports	25,487	17,275
Total	284,489	177,364
Net total Chinese imports	5,084,161	4,304,827
Exports of Chinese products of local origin:		
To foreign countries and Hongkong	1,785,627	1,719,916
To Chinese ports	826,017	858,201
Total	2,611,644	2,578,117
Gross value of the trade of the port	15,354,574	15,097,657
Net value of the trade of the port	14,437,400	14,894,560

In mountainous districts inland there are still many trees and these are cut and shipped to Amoy. At Changchow and Chioh Be sawmills, in which all the sawing is done by hand, are established, and from these cities sawn lumber is sent to Amoy.

Paper is made of bamboo pulp and a little straw and is extensively exported. It is usually of a cheap grade, but better grades are also made.

In Chuanchiu rope is made of a low grade of flax, while in other places coir rope is made from husks of coconut, though the latter is rare. The common rope in the vicinity of Amoy is made from a grass grown locally. It is twisted into short strands and

then by means of a wheel is twisted into long pieces. All of this work is done by hand. Fishing is one of the chief occupations of the people of Amoy, and much of the rope used by the fishing junks is made in this way.

A great deal of rice flour is made, but there are no modern flour mills. The wheat grown here is also ground into flour. In this process the rice or wheat is pounded in a stone receptacle, shaped like a mortar, a heavy wooden mallet being used as a pestle. This work is usually done in the country district by the women of the household. In the cities the same kind of stone mortar is used, but the pounding is done by men, who press with the foot upon one end of a beam, at the opposite end of which a weight is attached. When the pressure is released the weight or pestle falls and crushes the kernels.

The making of bricks in Changchow constitutes a large industry for the natives of that city. The clay in that vicinity is particularly well adapted to the making of bricks, and a splendid article is produced and is used in the construction of the better class of houses. If transportation charges were not so high bricks would become an important article of export. In Chuanchiu earthenware bowls are made and shipped to cities such as Manila and Singapore, whence many Chinese from this vicinity have emigrated. The Chinese rice bowl is of a particular type, and it is bowls of this style of which Chuanchiu makes so many. A splendid grade of kaolin, locally abundant, provides the raw material.

The growing of sugar cane for home consumption has been an industry of this section for many years. The cane is not well rounded nor has it the same quantity of saccharine juice as cane grown under such conditions as prevail, for instance, in the Hawaiian Islands. The exceedingly crude native mill is decidedly inefficient, the saccharine extracted being estimated at hardly more than 50 per cent. Two large, rounded granite rollers are set in a stone base and securely fastened together so as to revolve upon each other. A team of two or three bullocks, walking in a circle, forms the motive power, the cane being passed between the rollers two or three times. A comparison of such a mill with the Hawaiian mills of 9 and 11 rollers shows how far the native must go before he can hope to make his enterprise much of a financial success. Some years ago two small mills were started which ground in modern style, but as soon as the growers discovered that the owners of the mills were anxious to buy cane the price of cane was raised so high that they could not afford to purchase. In order to get cane they had to start their own plantation, and prices returned to the normal level. This policy of raising prices, which is often practiced by the native producer, greatly retards attempts to start new and modern enterprises.

Large quantities of Indian yarn are imported into Amoy. The Chinese have a crude weaving machine, little seen in Amoy but often in the neighboring country districts, which they use in weaving the coarse, rough cloth used in the country. This provides employment for many of the women of the family.

Near Amoy is the village of Amoykong, where the principal industry is building junks and keeping them in repair. The junks come in from the sea and at high tide go well up on the beach. When the tide runs out (there is a rise and fall of the tide here of 18 feet) these junks are beached and repaired. This little village builds the large three-masted sailing junks, manufactures the square sails so familiar in pictures of Chinese junks (these sails being made of bamboo woven into a pattern like the seats of open cane-bottom chairs, with a layer of "ti" leaves between two such meshes of cane, which are sewed together with other small strips of bamboo), makes its own rope, and to a large extent fashions its own ironwork. It also makes the large fish nets used by the junks. The boats bring into Amoy large quantities of fish, which are sold in the local market and sometimes salted and dried.

Along the China coast Foochow is famous for its lacquer and Swatow for its pewter ware, but Amoy has no distinctive product for which it is known. Some years ago an enterprising foreigner started the women of Amoy making lace. The designs are usually conventional, and at times, with permission, some designs are copied. The thread is imported from Belfast. The lace is made by hand by women and girls, often at their homes, and as they readily learn by rote the necessary mechanical motions, very young and not especially intelligent girls become successful lace makers. The pattern is worked out on a piece of paper, pins being used to guide the thread. It is interesting to note how this home manufacture of lace in Amoy parallels the lace making in the homes of Ireland.

Deposits of coal are said to exist in this vicinity, and iron, graphite, and antimony are also to be found among the hills. At present, however, without factories or mines the people are almost purely an agricultural and fishing population. If these mines are opened or milling started, it is not improbable that the general character of the people's occupations will be greatly changed.

IMPORT TRADE OF AMOY.—Of the total imports into the port of Amoy in 1917, expressed in Mex. dollars, $8,011,625 represented foreign goods and $4,304,827 native goods, principally from Shanghai, Newchwang, Dairen, and Chefoo. The imports of Chinese goods, representing principally foodstuffs, included rice and paddy, $439,677; flour, $441,606; beans and peas, $410,550; vermicelli, $52,161; prawns, $94,312; mushrooms, $63,678; tea, $47,695; bean cake for fertilizer purposes, $1,389,042 (the largest single item); cotton yarn, $251,422; cotton, $32,585; samshu, $98,191; tobacco leaf, $88,576; and cigarettes, $87,868.

LEADING ARTICLES IMPORTED.—The value and quantities of the principal items of foreign goods imported in 1916 and 1917 are given in the following table:

Articles.		1916		1917	
COTTON GOODS.		Quantity.	Value. $	Quantity.	Value. $
Blankets	pieces	9,005	8,029	4,070	4,465
Cloth, Japanese	yards	1,149,629	59,005	1,485,736	125,029
T cloths, 32 inches:					
English	pieces	5,993	12,310	9,118	26,692
Japanese	do.	44,320	82,598	36,631	90,793
Turkey-red cottons and dyed T cloths	do.	10,899	21,937	14,411	48,680
Drills:					
American	do.	1,705	7,668	2,128	12,589
Other	do.	1,300	5,313	1,400	6,601
Flannelettes, plain, dyed, and printed	do.	5,747	9,276	7,028	31,498
Jeans	do.	1,911	8,602	943	4,166
Lenos and balzarines, white, dyed, and printed	do.	5,154	11,542	2,841	8,900
Shirtings, plain:					
Gray—					
English	do.	38,179	94,661	22,212	71,109
Japanese	do.	5,300	15,700	3,437	10,645
White	do.	24,392	92,069	16,977	87,159
Dyed cotton italians, venetians, and lastings:					
Plain—					
Fast black	do.	19,299	58,898	15,311	114,265
Colored	do.	—	—	2,481	14,937
Figured	do.	14,961	60,020	17,785	120,747
Plain cotton prints	do.	14,426	34,174	13,190	51,488
Thread:					
Spools	gross	13,454	20,727	10,588	27,324
Balls	tons	11	11,761	12	9,138
Towels	dozen	23,282	8,192	16,173	7,416
Yarn:					
Indian	tons	720	196,841	570	324,596
Japanese	do.	217	65,466	137	77,336
All other cotton goods		—	65,378	—	156,465
MISCELLANEOUS PIECE GOODS.					
Canvas and cotton duck	yards	36,880	13,659	32,619	11,675
Woollen goods		—	32,912	—	47,991
All other miscellaneous goods		—	3,194	—	11,829
METALS AND MINERALS.					
Brass and copper manufactures		—	4,768	—	12,618
Iron and steel manufactures	tons	575	44,425	442	35,643
Lead	do.	334	5,259	51	11,023
Quicksilver		—	21,021	—	23,113
Tin:					
Plates	tons	440	56,192	138	32,551
Slabs	do.	223	155,435	209	192,753
All other metals and minerals		—	4,356	—	2,763
SUNDRIES.					
Beans, peas, etc.	tons	35	962	1,494	37,747
Bêche de mer	do.	240	63,629	261	94,728
Birds' nests	pounds	8,080	44,223	6,073	30,173
Bottles, empty		—	16,680	—	9,007
Candles		—	37,416	—	15,311
Cement	tons	822	11,438	1,292	22,335
Cereals: Rice and paddy	do.	41,468	1,514,760	34,380	1,467,576
Cigarette-making materials		—	20,019	—	10,319
Cigarettes	mille.	46,121	122,291	67,056	207,313
Cigars	do.	216	3,221	318	5,838
Cinnamon	tons	6	6,980	5	8,253
Clocks and watches	pieces	6,702	10,260	3,738	7,351
Clothing, hats, boots, shoes, and gloves (other than india-rubber or leather)		—	57,151	—	90,403
Coal	tons	18,051	102,812	6,817	90,253
Dyes and dyestuffs		—	22,125	—	19,811
Electrical materials and fittings		—	23,057	—	30,144

Articles.		1916 Quantity.	1916 Value.	1917 Quantity.	1917 Value.
SUNDRIES.			$		$
Emery and corundum	...	—	608	—	25,307
Enameled ware	... ...	—	12,835	—	11,955
Fish and fishery products n.e.s.	... ... tons	4,988	575,403	5,430	811,597
Flour	... ... do.	131	7,109	5,445	436,485
Furniture and furniture materials	... ...	—	18,955	—	21,759
Ginseng	... ...pounds	22,615	172,521	12,284	54,363
Glass and glassware	...	—	5,854	—	8,014
Glass window	... ... boxes	1,307	9,559	1,614	12,726
Hemp	... ... tons	57	9,787	68	14,415
Hosiery	... ... dozen	30,173	22,521	42,306	54,521
Lamps and lampware	...	—	19,031	—	6,995
Leather and manufactures of, n.e.s.	... ...	—	29,862	—	35,492
Machinery	... ...	—	15,125	—	6,843
Manure	... ... tons	513	19,353	771	42,933
Matches	... ... gross	545,199	189,667	773,252	362,494
Meats, prepared and preserved		—	26,863	—	17,331
Medicines	... ...	—	139,729	—	183,907
Milk, condensed	... ... dozen	22,164	29,924	18,228	33,110
Molasses	... ... tons	1,290	20,594	119	1,717
Mushrooms	... ... do.	31	24,490	20	23,371
Oil, kerosene :					
American	... ... gallons	1,763,640	500,478	1,010,154	303,543
Borneo	... ... do.	451,137	87,190	147,358	25,059
Japanese	... ... do.	261,140	46,721	448,522	82,349
Sumatran	... ... do.	653,925	148,104	500,642	120,195
Paints and paint oil	... tons	57	11,755	53	13,093
Paper, including cardboard		—	12,053	—	15,937
Seeds	.... tons	64	5,433	66	10,204
Soap and soap-making materials	... ...	—	48,727	—	76,258
Spirits of wine	... ... gallons	48,464	18,867	36,152	13,438
Stores, household, n.e.s.	...	—	44,503	—	24,881
Sugar :					
Brown	... ... tons	66	4,337	64	4,578
White	... ... do.	3,537	299,874	2,027	191,654
Refined	... ... do.	3,081	339,960	1,465	189,660
Candy	... ... do.	219	24,829	65	7,548
Tea (Formosa)	... ... do.	16	4,780	35	14,205
Umbrellas, European and American	... number	21,335	12,611	23,515	20,507
Wines, beer, and spirits	...	—	44,162	—	69,254
Postal parcels, n.e.s.	...	—	46,521	—	75,333
All other articles	... ...	—	343,656	—	388,018
Total	... ...	—	6,752,773	—	6,776,313

EXPORT TRADE.—The following table shows the quantity and value of the more important articles exported from Amoy to foreign and to Chinese ports during 1916 and 1917 :—

Articles.		1916 Quantity.	1916 Value.	1917 Quantity.	1917 Value.
			$		$
Bags of all kinds	... ... pieces	199,852	7,692	182,550	8,166
Bamboo and bamboo ware		—	28,831	—	23,533
Beans	... ... tons	2,200	72,180	1,095	36,757
Books, printed	... ... do.	20	10,695	8	6,277
Chinaware	... ... do.	225	12,324	200	13,574
Coal	... ... do.	3,979	30,815	1,195	23,440
Cordage	... ... do.	49	14,541	24	9,649
Fish and fish products	... do.	322	27,475	3,728	18,300
Fishing nets	... ... do.	33	19,989	20	15,225
Fruit, n.e.s.	... ... do.	289	19,485	259	19,401
Garlic	... ... do.	247	6,741	322	10,845
Grass cloth	... ... do.	20	32,267	20	38,227
Hides and skins, undressed —Cows and buffalo	... do.	477	156,612	433	174,897
Joss sticks	... ... do.	63	17,232	23	17,686
Longans, dried	... ... do.	83	11,967	45	7,888
Mats	... ... pieces	48,545	11,094	30,290	7,442
Medicines	... ...	—	17,126	—	16,212
Nankeens	... ... tons	19	15,748	20	20,652
Oil, groundnut	... ... do.	97	15,948	56	7,338
Oranges, fresh	... ... do.	392	10,086	131	6,000
Paper :					
First quality	... ... do.	335	91,656	455	133,276
Second quality	... ... do.	80	6,554	114	11,495
Joss	... ... do.	1,462	281,741	1,167	281,600
Plants and shrubs	... ...	—	26,261	—	36,479
Potatoes	... ... tons	539	9,265	201	6,754
Pottery and earthenware	... do.	348	10,468	223	7,352
Samshu	... ... do.	453	86,321	426	95,126
Seeds, rape	... ... do.	65	6,445	63	8,293
Soy	... ... do.	32	5,636	30	8,012
Stones, granite, etc.	...	—	6,502	—	8,000
Tea, black	... ... tons	497	155,415	346	135,310

Articles.		1916 Quantity.	1916 Value.	1917 Quantity.	1917 Value.
			$		$
Tobacco :					
Leaf and stalk	... do.	648	84,383	565	68,309
Prepared	... ... do.	1,204	329,191	680	228,888
Turnips, dried and salted	... do.	356	13,154	238	12,009
Umbrellas, paper (kittysols)	number	291,782	39,873	96,082	14,437
Vegetables, n.e.s.	... ... tons	665	52,612	455	70,978
Vermicelli and macaroni	... do.	1,561	170,621	1,227	123,936
All other articles	... ...	—	129,673	—	147,592
Total	... ...	—	2,044,629	—	1,880,005
Re-exports from other Chinese ports		—	259,002	—	160,089
Net total	...	—	1,785,627	—	1,719,916

In 1917, 689 steam vessels entered the port, with a tonnage of 822,957, as compared with 717 steamers, with a tonnage of 921,147 tons, in 1916. The principal nationalities represented were British, with 282 vessels of 365,551 tons, compared with 365 vessels of 479,318 tons in 1916; Japanese, 281 vessels of 281,081 tons in 1917 and 223 of 246,217 tons in 1916; Chinese, 74 vessels of 65,831 tons in 1917 and 89 of 91,636 tons in 1916; Dutch, 37 vessels of 95,147 tons in 1917 and 32 of 86,620 tons in 1916; and American, 7 of 10,110 tons in 1917 and 3 of 6,219 tons in 1916.

Steamer communication between Amoy and Manila having been suspended by the usual British vessels in the spring of 1917, arrangements were made during the summer to have the American vessels operated by the Philippine Government which carry coal from North China to Manila and stop at Amoy for Chinese passengers on the trip southward.

TRANSPORTATION FACILITIES.—Amoy enjoys many facilities in the way of water communication. The lines giving regular service are as follows:—

(1) Douglas S.S. Co., Ltd., Hongkong, Swatow, Amoy and Foochow; (2) Osaka Shosen Kaisha, Hongkong, Swatow, Amoy and Formosa; (3) Seang Line of Steamers, Amoy, Swatow, Hongkong, Straits, Burma; (4) Ho Hong S.S. Co., Ltd., Amoy, Swatow, Hongkong, Straits, Burma; (5) Indo-China S. N. Co., Ltd., Amoy-Manila; (6) China Navigation Co., Amoy-Manila and Shanghai, Amoy, Hongkong, and Canton; (7) Java-China Japan Line, Java ports, Hongkong, Amoy, Shanghai, Dalny and Japanese ports.

HARBOR FACILITIES.—There is no wharf accommodation. The China Navigation Co. and the China Merchants Steam Navigation Co. maintain hulks for the sole use of their own vessels. Steamers other than these anchor in the harbor, and the regular lines have buoys laid down for their use.

Without the use of a pilot it is considered safe for a ship drawing not more than 18-ft. to enter port at L.W. Springs, at L.W. Neaps 21-ft. With pilot a draft of 30-ft. at any tide is thought safe. Pilotage is compulsory if steamers anchor; not compulsory if steamers proceed to recognized berths, i.e., buoys.

There is one dock, capable of receiving vessels up to 340-ft. in length, 40-ft. beam and a mean draft of 15-ft. A large stock of supplies for repairs is kept.

The Amoy dockyard, owned by a British company, was sold at the close of the year to the Chinese Government at $410,000 local currency.

PORT CHARGES.—Customs tonnage dues are charged at the rate of Haikwan (i.e., Customs) Tael 0.40 per net registered ton and is available at any Chinese Treaty Port for the period of 4 months; 1 Haikwan Tael is about Mexican $1.57. Pilotage, Mexican 1½ cents on registered tonnage inwards and the same rate outwards.

Rates for loading and discharging are the same and are as follows on chief commodities:—Grain, rice, wheat at 2 cents per bag; large beancake and flour at 70 cents per 100 pieces and per 100 bags; samshu (Chinese wine) at 1½ cents per jar; small beancake at 40 cents per 100 pieces; merchandise (paper, tobacco leaf, etc.) at 5 cents per package; sugar (50 catty bags) at 1¼ cents per bag. For overtime, double above rates. Coal, discharging, coolie hire, 22 cents per ton; boat hire, 16 cents per ton. Shipping off bunker coal, coolie hire, 18 cents per ton; boat hire, 16 cents per ton. For overtime, double above rates. Cost per day for general labor, Mexican $0.60 per head. Lighterage, cost per ton, Mex. $0.30 to $0.35 per ton. Lighterage, cost per lighter per day, Mex. $6.00.

MERCHANTS.—Boyd & Co.; Butterfield & Swire; Jardine, Matheson & Co., Ltd.; Mitsui Bussan Kaisha; Tait & Co.

Swatow

The seaport of Swatow is situated at the mouth of the Han River, in Kwangtung Province, near the border of Fukien Province, in lat. 23 deg. 20 min. 43 sec. E., long. 116 deg. 39 min. 3 sec. N. It is the shipping port for Chaochowfu, 25 miles inland, and Sanhopa, 40 miles farther up the Han. Swatow is on th-



THE FOREIGN SETTLEMENT, SWATOW

northern bank of the Han, on a promontory formed by the river and the sea, with frontage on both waters. The town is 170 miles north of Hongkong and 123 miles south of Amoy. Swatow was opened to foreign trade in January, 1860, but the first traders met with hostility and for some years trade with the port was carried on through the island of Namoa, which lies directly off Swatow, where vessels anchored in the days of the opium trade. Opposition against foreigners was severe until comparatively recent years, but the port is now prosperous under foreign trade. The native population is 70,000, and the town is growing rapidly

Like Amoy and Kongmoon, Swatow is the port of departure of large numbers of laborers bound for plantations and workshops in the Straits Settlements and the East Indies. A competent Chinese authority estimates the average number of emigrants from this port abroad at 3,000,000, and their annual homeward remittances at $21,000,000. These emigrants, of whom about 100,000 leave annually, have greatly increased the prosperity of the region by the wealth they return.

The climate of Swatow is salubrious, ranging over the year between 50 and 95 degrees Fahrenheit. Between the latter part of August and the beginning of October there is much wind and occasional typhoons, for Swatow, being opposite the lower mouth of the Formosa Channel, is occasionally visited by these terrific storms which sweep the lower coast of China. The port is kept fairly clean. In 1914 a waterworks for the city was constructed by a Hongkong firm at Hankiang, 8 miles above the town, including precipitation and filtering tanks. An electric light plant was constructed in 1909, the installation consisting of four Young's Lancashire boilers, two Babcock and Wilcox water-tube boilers, two Worthington feed and fire pumps, one Cameron (U. S. A.) surface condenser, four self-lubricating engines by Bellairs and Morcam, of Manchester, and four direct-current generators and switchboard produced by a Berlin firm. The town is thoroughly wired at a pressure of 220 volts, and streets and homes are well lighted. There are electric light plants also at the nearby markets of Chaochowfu, Kaying and Hingning.

COMMERCE AND INDUSTRY.—The principal products which find a market through Swatow are sugar, peanuts, peanut oil, indigo, tobacco, jute, nankeens, feathers, hides, grass cloth, wolfram ore, firecrackers and human hair. Exports in 1917 were valued at Tls. 14,794,217. Imports in the same period were Tls 14,023,639 of foreign goods and Tls. 23,082,495 of native goods, the preponderance of imports being made possible, to a large extent, by the large influx of silver from emigrants from the district who work in foreign countries. The total combined trade of 1917 was Tls. 6,500,000 less than in 1916, and, in fact, reached the lowest figure since 1913, due to the shortage of shipping space and the high price of silver, which curtailed exports, and to political disturbances in the province. The purchasing power of the Chinese in the region has declined, also, due to the decreased remittances from emigrants employed in gold standard countries, who found the high price of silver a serious disadvantage.

In the import trade Hongkong came first with a total of Gold $10,052,350; Japan took second place with imports amounting to Gold $2,120,813; and the United States was third with Gold $695,189. The trade of the United States was entirely in kerosene.

Considerable beancake is imported from Hankow and Newchwang for fertilising purposes. Butterfield and Swire have erected spacious godowns principally to handle this trade.

Among the industries are many factories producing cloth on metal looms of Japanese make, by hand-power; a knitting factory, with steam power, producing socks and underwear; a rice mill, equipped by a Japanese firm; and canning factories for packing native produce for sale to emigrants in foreign countries.

MINING.—Mining has become an important industry with the discovery of wolfram ore about Swabue in the summer of 1917. Since then deposits of the ore have been found in other parts of the district and now many thousands of Chinese are digging for the valuable mineral. Exports in 1917 were 292 piculs, but the output is increasing. Some anthracite coal is mined in the region, and coal-dust is now being mined.

The mining of coal in the province has received an impetus in the high price of imported coal, and native coal dust now on the market is beginning to supplant Hongay dust. So far mining has been confined to surface and shallow shaft workings, principally in the region of Kayingchow. When imported coal returns to the market at low prices the present unorganized native industry will undoubtedly cease, as the deposits are away from water transportation, making expensive portage necessary. The Kayingchow dust coal, a variety of anthracite, is selling for around Mex. $13, while Hongay bituminous dust sells for $22.50. The import of the latter has practically ceased.

Wolfram ore is being found in the nearby districts of Haifeng, Lufeng, Puning, Kityang and Wuhua. Vein deposits have been located, where formerly the ore was found only on the surface. The Wuhua district appears to contain the largest deposits. A group of villages about Tunglinghsia form the principal centre of production, the area covering 6 or 7 square miles of ground in which the ore is found in large veins combined with quartz crystals. About 2,000 sheds have been erected as shelter for the Chinese who have flocked there, since the summer of 1917, in search for the metal which they term "black gold." This area is about 50 miles north of Hopo, the head of small craft navigation in the Kityang River. Other centres of production are Heilin in the Wuhua district and Taiyong in the Kityang district.

TRANSPORTATION FACILITIES.—Swatow is now suffering with all other ports from the shortage of ships and the general disruption of shipping service. There are several lines to Hongkong, Foochow and Formosa with regular service, and less regular service to the East Indies, Indo-Chine, and the Straits Settlements, and to Tientsin, Newchwang and Dairen. Entrances and clearances in 1917 totalled 1,842 steamers of 2,135,188 tons, with the British leading with 1,134 vessels. The launch service, which is important in the shallow inland waters, totalled 10,039 entrances and clearances of 371,026 tons. Of these 6,761 of 220,776 tons were Chinese, 978 of 70,650 tons were British, and 2,300 of 70,600 tons were French.

Swatow is connected with Chaochowfu, a prosperous market of 400,000 inhabitants on the Han, 95 miles inland, by a railway opened to traffic in 1906, and this railway also connects the port with other prosperous towns *en route*. The conservative and superstitious natives resented the building of the railway, and at one time two Japanese employes engaged in construction were killed by a mob of villagers a short distance from Swatow. Chinese capital was employed; the engineers were Japanese; locomotives, girders and rails were imported from America, while cars and other material came from Japan. No engineering difficulties were met with, as the line traverses the plain of the Han Delta; only two bridges were built, these being 180 and 120 feet in length. The cost of the complete railway was Mex. $3,300,000. The line has not been altogether successful, as it is difficult to compete with native junks in carrying freight; however, it is a popular line with passengers.

A light railway with tram cars designed to be pushed by two coolies is under construction between Swatow and the flourishing market of Changlin, 20 miles distant. Six miles are now open for service

PORT FACILITIES.—Vessels anchor in the harbor limits, the area of which is 410 acres. Butterfield & Swire have four pontoons and one buoy; Jardine, Matheson & Co. have one pontoon and one buoy; while the Douglas Steamship Company, the China Merchants Steamship Co., Bradley & Co., and the Osaka Shosen Kwaisha each have one buoy. These may possibly be hired when vacant. The pontoons accommodate steamers 250 to 300 feet long and drawing 15 to 18 feet. The depth of water on the bar is 18 feet.

PORT CHARGES, ETC.—Port Charges: Tonnage dues, 4 mace per ton, available 4 months only. Other charges, permits to work at night, Haikwan Taels 10; Sunday or holiday permits, Haikwan Taels 20.

STEVEDORING.—Rates for loading and discharging cargo, 75 cents per 100 packages. Cost for general labor, 80 cents per 100 packages. Lighterage, cost per lighter per day, $6 to $8.

PILOTAGE.—Pilotage is not compulsory. Pilot's fees are as follows:—

(*a*) Shifting a vessel's berth to or from any steamer, wharf or pontoon, $20 Mexican in full.
(*b*) Taking a vessel to or from, or shifting to or from any oil installation moorings, vessels up to and including 1,500 tons, Mexican $15 in full; over 1,500 tons, Mexican $25 in full.
(*c*) Shifting a vessel's berth in the stream, Mexican $15 in full.

The Sikiang (West River)

The West River, rising in North-East Yunnan, flows through Kweichow, Kwangsi and Kwangtung, and passing by the walls of Canton enters the sea near Hongkong. Though navigable for steamers for over 300 miles at all times of the year, Canton was for forty years the limit of steam navigation, and it was not until June, 1897, that Wuchow was declared a Treaty Port, and steamers allowed to navigate the 218 miles lying between Canton and that city. At present the steamers in use are small. Large numbers of native cargo-boats are towed up and down by Chinese owned steam launches, at somewhat lower rates than the steamship companies charge.

At Canton there is a wharf alongside which the river steamers can lie, but as yet at Wuchow there is no such equipment, and the vessels either anchor in the steam or alongside the pontoons of the shipping firms. Around Canton, and, in fact, throughout all the delta, is a perfect network of creeks and streams, all utilised to their fullest extent by the various types of craft engaged in the local carrying trade.

At Samshui, a busy place opened to foreign trade at the same time as Wuchow, enters the Pekiang or North River, which is a fine stream passing through and giving access to a most fertile and thickly-populated district lying to the north of the main stream.

Above this, though other small tributaries join the river on both banks, it is not until Wuchow is reached that any considerable feeder is found. Here the Kiukiang River, coming down from Kweilin, the capital of the Province, joins the West River, and judging by the quantity of junks to be seen on its waters, it is the medium for an immense local traffic between Kweilin, Pingtofu, and Wuchow.

Up to Wuchow, the river presents few difficulties to steamers of suitable construction, and motor boats trade thence to Nanning. During the high water of the summer months the rapids above Wuchow, which are spoken of as a possible barrier to steam navigation, are hardly visible, and the native craft pass over them apparently without difficulty or danger. The sudden rise and fall in the river, due to heavy tropical rains in Yunnan, Kwangsi and Kweichow, have caused the owners of pontoons at Wuchow and Samshui considerable anxiety and trouble, as it is necessary to move these unwieldly constructions to meet the varying height and strength of the river.

At Wuchow, for instance, there is an annual average rise of over forty feet, and at one time the water is up to the level of the city wall, while at another there is quite a wide reach of sloping shore between the city and the water's edge. The next large place reached after leaving Wuchow is Sinchowfu, a busy city occupying a prominent position at the junction of the Yukiang with the main branch of the West River.

Both rivers are navigable for several hundred miles above this point, the one as far as Nanning for motor boats and large junks, thence for small craft to Poseting; and the other as far as Sanduore in Kweichow. These places indicate the direction and limit of the navigable portions of the West River and its principal tributary, the Yukiang, though in addition there are many subsidiary streams navigable for the small light draft boats in use on such waters.

The motor boat service from Wuchow* to Nanning was inaugurated by Mr. Banker in 1903, has been improved from time to time, and traffic is carried at certain seasons of the year as far as Poseh, near the Yunnan border. The motor boats now running a regular service between Wuchow and Nanning carry a cargo of about thirty tons deadweight. Some have a cargo capacity of eighty tons. Mr. Banker's firm run twelve boats, and there are Chinese competitors. The trip, about 200 miles, costs $15, first-class, including food, but steerage accommodation is also provided. Other regular services from Wuchow are to Sunchow (95 miles) and from Sunchow to Liuchow (180 miles). The boats are usually fitted with 100 to 200 horse-power engines. A large motor boat, 180 ft. long by 32 ft. beam was launched at Hongkong in October, 1918, for ultimate service between Hongkong and Wuchow. She is fitted with two semi-Diesel crude oil engines of 240 horse power with an estimated fuel consumption of one-half a pound per horse-power hour.

In the future it is likely that every effort will be made to develop by means of such a magnificent system of waterways, the trade of the districts they serve, especially of those Provinces which by reason of their remoteness and the absence of railway communication, are cut off from the great shipping ports on the coast.

Towards the borders of Kweichow and Yunnan the population, it is true, is very sparse but in Kwangsi there are on the river's banks many large and busy towns. The three open ports in Kwangsi, along the West River and its tributaries, are Wuchow, Nanning and Lungchow, in the order of their situation up-river.

Canton

Canton is situated on the left bank of the Chu Kiang (Pearl River), 80 miles from Hongkong by water and 111 miles by rail, in lat. 23 deg. 7 min. 10 sec. N., long. 113 deg. 14 min. 30 sec. E. It is a walled city, the walls some ten miles in circuit, lining the river bank for a distance of three miles and extending to a depth of about two miles from the bank. At either end of the walled portion are suburban extensions each adding a mile to its length: the walled portion is divided into three districts known as Tungkwan, Saikwan and Namkwan, access being had by sixteen gates. Across the river are the towns of Wati and Fati. The density of population is extremely high in all these places; the total has been estimated at from one million to two and a half millions, but most authorities place it at two millions. A sort of census made by the Canton police several years ago put the population within the walls at 800,000 and the number of boat people at an additional 75,000.

Shameen, an island separated from the left bank by a narrow channel, is the site of the foreign concession. The area of Shameen is 44 acres. The island is connected with the walled city by two bridges, which are closed after ten o'clock at night. Four-fifths of the Island is the property of Great Britain and one-fifth belongs to France; the settlement is entirely self-governing.

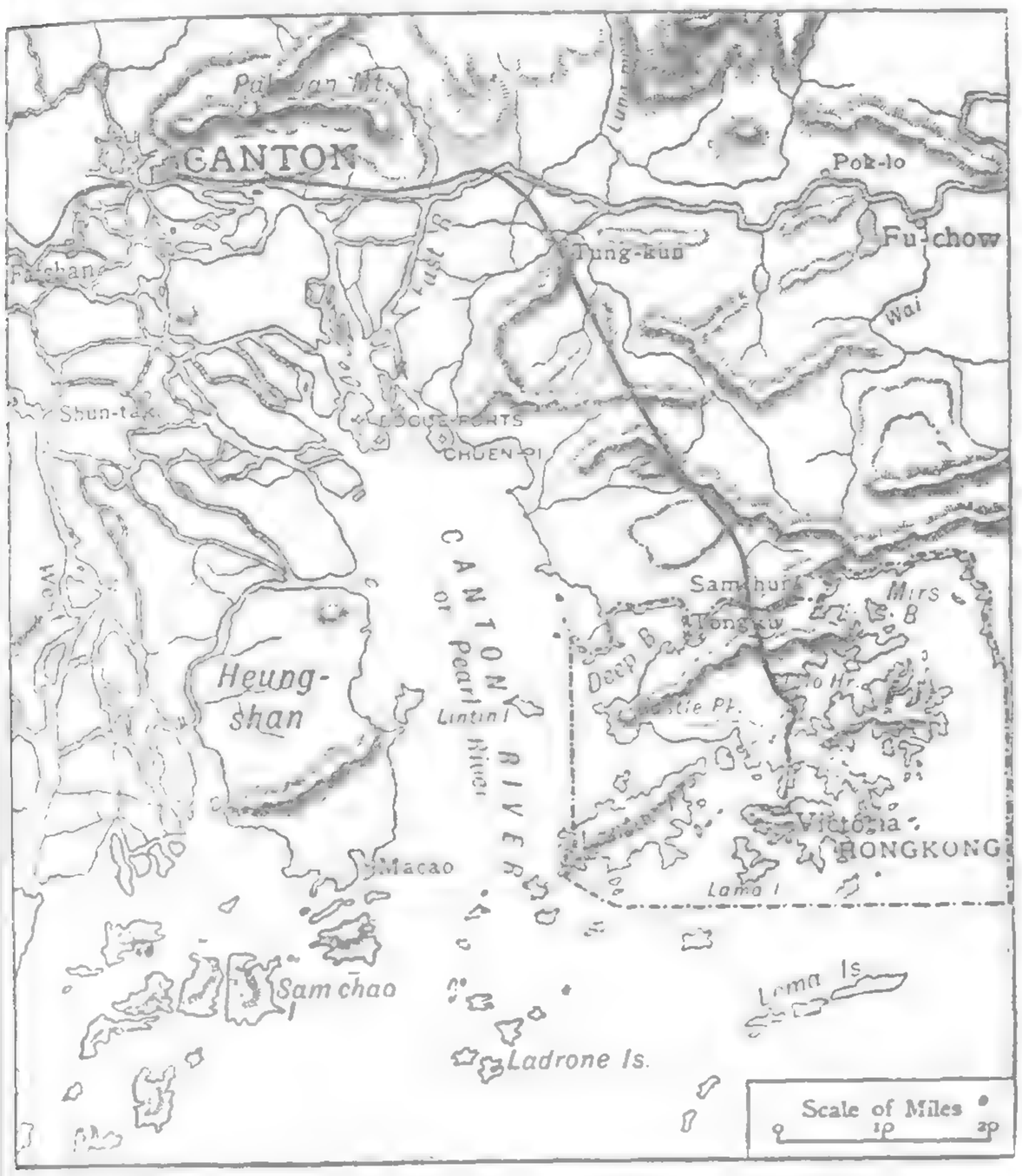
The climate of Canton is sub-tropical. In July and August the mercury often registers more than 100°F. in the shade. The rainy season is in the spring. In common with the neighboring region, Canton suffers from destructive typhoons at the end of the summer season. The native city of Canton is kept fairly clean by scavengers in the employ of the municipality, and plague prevention measures are taken to a certain extent A waterworks plant was installed in 1907, and an electric light plant is in operation.

The city walls, which were erected in the 16th century, are now in the process of destruction to provide space for avenues and street car lines.

From the port's long contact with foreigners, the people of Canton have learned to go abroad and returning bring with them

*See FAR EASTERN REVIEW, October, 1918, "Motor Boats in South China."

progressive ideas and more wealth than might have been made in their native country. The great majority of the Chinese abroad are Cantonese, from the city or some nearby district. Many Cantonese are in Australia, the Straits Settlements, the Philippines, the United States, and Hawaii. A progressive spirit may be noted in Canton particularly.



MAP SHOWING THE RELATION OF CANTON TO HONGKONG

Canton presents attractions which bring a large number of tourists each year. The city is the centre of missionary activity in the South, and is well equipped with mission schools and hospitals. The guild idea has probably been developed to a greater extent in Canton than elsewhere, and there is a guild of guilds—"The 72 Hongs," formed of 72 guilds of various tradesmen, of which might be mentioned bankers, goldsmiths, pawnbrokers, silk merchants, tea merchants, wine dealers, fishmongers, theatrical dressmakers, ginseng dealers, bean-curd makers, dealers in copper cash, bamboo dealers, dealers in articles made of pear-wood, dealers in scented woods, coffin dealers, matting makers, face-powder makers, dealers in gilt embroidering thread, etc., etc.

A peculiarity in Canton is the habit of locating all shops of each trade together. For instance, most of the dealers in jade articles may be found in the same neighborhood, the coffin makers in another, and so forth. This is probably a survival of the time when the guilds were taxed for the repairing of streets, and selected a compact section of roadway on which to establish their shops together that the members might see after the repairing themselves, or at least check the expenditure of their contribution and see that none of it went for other purposes. The principal object now of putting all shops of a kind together seems to be that the shopkeepers may see that no unfair competition, such as selling below the agreed minimum prices, is attempted.

The boat people of Canton form a picturesque feature of native life. The stream teems with thousands of small craft, from the tiny sampans ("*sam pan*": a Chinese expression meaning "three boards," humorously applied to the craft to indicate its simplicity of construction) which bear steamship passengers ashore, to boats up to forty feet in length which sometimes make voyages to Hongkong and often to nearer places. In these boats the boat people are born, marry, live and die, sometimes a whole family sharing a craft that would be regarded as uncomfortably small for rowing purposes by a foreigner.

Canton is a buzzing hive of native industry. Rare and precious articles are made by the most patient and skilled of workmen side by side with native shops for producing coarse goods, like matting and reed furniture for export and iron pots and pans for native use. The hand-made products include manufactures of rattan, gold, sandalwood, silver, ivory and glass; embroideries, jewelled goods, fans of numerous varieties, and jewelry of all sorts. The weaving of silk and the preparation of tea for export are important industries. Carved and mother-of-pearl mounted furniture made of heavy hardwood known as blackwood is a product of Canton workshops prized in all parts of China. The city has always been famed for its manufacture of Chinese sweetmeats, sauces and preserved fruits. Preserved ginger from Canton finds its way into many foreign markets, and soy from Canton goes abroad in quantities to form the basis of some of the foreign table sauces.

Canton is the name incorrectly given to the city by the early Portuguese traders as an approximation of the name of the province of Kwangtung, of which Canton is the capital. The Chinese name is Kwangchow, but it is rarely given this title in conversation among the natives of the province—"City" or "Provincial City" being sufficient indication. It is probable that nearly all foreigners abroad receive their impression of the Chinese through Cantonese washermen, shopkeepers, artisans or servants with whom they come in contact, yet the Cantonese are almost a race apart from the true Chinese of the North and form only a relatively small portion of the population of China. The natives of the north look upon the Cantonese almost as strangers or "outsiders"; their spoken language is not understood in the other provinces. Cantonese find their way into all the trading centres of the Far East, where their attention to business and genius for trading bring them success.

Canton has always been marked for its independent spirit toward the Central Chinese Government. It was the original centre of the revolutionary movement in 1911 which terminated in the abdication of the Manchus and the foundation of the Chinese Republic. The Manchu Tartar-General at Canton was shot by the revolutionaries in April of that year, in May an assault was made on the Viceroy's yamên, and later in the year the new Tartar-General was assassinated by a bomb as he landed in the city. In October the revolution had spread over the empire, and the Viceroy of Canton, recognizing the hopelessness of resisting the revolutionaries with troops honeycombed with sedition and with the population unanimously in favor of the revolution, relinquished the government to the revolutionary leaders. Dr. Sun Yat-sen, a "native" of Kwangtung Province, became the provisional president of the Republic. In 1913 a rebellion broke out in several provinces against the rule of Yuan Shih-kai, the successor to Dr. Sun, and the independence of Kwangtung was again declared. A rebel force was organized to proceed north and punish Yuan, but the movement was put down by Lung Chi-kwong, the Military Governor of the neighboring province of Kwangsi, who sympathized with the Central Government. In 1916 the province again declared its independence upon the attempt of Yuan Shih-kai to found a monarchy and ascend the throne. Meanwhile some dispute had arisen between Kwangtung and Kwangsi, and, during the negotiations, General Lung, who had assumed the Military Governorship of Kwangtung, was declared by the Kwangsi leaders to be in sympathy with the monarchial movement and a traitor to the Republic. A war between the provinces ensued, the scene of which eventually reached the city of Canton. During the quarrel Yuan Shih-kai died, and his successor ended the fighting by transferring General Lung to another province. The political situation in 1917 was much confused: it can be said at least that Dr. Sun formed a Provisional Government there and some 200 members of the former Peking parliament which had been dissolved by Yuan Shih-kai's government have formed another parliament in Canton.

The fortuitous political events in Kwangtung within the past few years have seriously harmed the trade and industry of the province, partly by destroying the confidence of the merchants and manufacturers but principally by fostering the recrudescence of piracy and brigandage through the removal and employment in battle of the military guards.

The electric light plant in Canton was taken over by a Chinese concern from a firm of British merchants of Hongkong, in 1909.

The demand for electric lighting has been so great that the plant can take on no new burden until the erection of a turbine plant which will cost $1,500,000 and was ordered from an American firm in November, 1917. The demand for new lamps in 1917 exceeded 1,000 per month. The daily output of the waterworks is 626,000 gallons. The charge for water is $1.80 per month for a household of six persons or less.



THE RIVER AT CANTON

CANTON HARBOR.—The Canton River divides into two reaches at the upper portion of Canton City, roughly at Shameen Island, thus forming the island of Honam, and the two reaches unite some ten or twelve miles below the city. The Front Reach, a narrow and shallow stream allowing anchorage only for junks and small river steamers, is the portion upon which that part of Canton City below Shameen Island is situated, while the part of the city above Shameen lies on the main stream.

The anchorage for the smaller coasters and the river steamers is in the main stream off and above Shameen Island and in the Back Reach. A deep-water basin with a depth of 21 feet below low water begins off Honam Spit, in the Back Reach, and stretches up the river for about 5,000 feet, the average width between the 21-foot contours being about 490 feet.

The Front Reach is bounded on the left bank (Canton City side) and on some parts of the right bank. The right bank of the Back Reach is bunded for a length of about 9,000 feet, while its left bank (Honam Island) is still without seawall for the greater part of its length, only the Customs Buoy Yard and Butterfield & Swire's wharf being provided with stone bunding.

Presuming the approach to be of sufficient depth, ships of 22-foot draft and up to 450 feet in length could be accommodated in the central harbor of Canton. However, the restrictions upon navigation into Whampoa and into Canton Harbor are explained below.

HARBOR APPROACHES.—The two deep-water channels ir the estuary below Boca Tigris determine the maximum draft of vessels which can ever be utilized in the Canton shipping trade The depth is at present 20 to 21 feet at low water, extraordinary spring tides. Allowing a margin of 1.5 feet under the keel, and counting the available minimum high water at neap tides to be 4.2 feet, a vessel drawing not more than 22.7 feet cannot enter the Canton River every day in the year. By taking full advantage of the spring tides. vessels carrying a draft of 24 feet have succeeded in entering Whampoa Anchorage, and under the same conditions Canton Harbor was at one time visited by a steamer of 19 feet draft.

At and immediately above the Boca Tigris the depth of the fairway is considerably over 24 feet up to the Second Bar, some 15 miles above the sea, where the depth is 14 feet at low water of extraordinary tides and the river expands to a width of over two miles. From this point to First Bar Island, just below Whampoa, which marks the junction of the Front and Back Reaches, ample water is found.

From this point river steamers bound for Canton use either of the two reaches, but larger ships have to use the Back Reach. Proceeding by the Back Reach ample water continues to Maitland passage, on the north side of Changshan Island, where the maximum depth is 14 feet. The next shallow reach is the Taishek shoal, and after this the Taimei crossing, where only 9 feet can be counted upon with safety. The last shallow reach before arriving at the Shameen Anchorage is in Canton Harbor proper, at and below Honam Spit, where the two Reaches begin, with a depth of only 13 feet.

However, larger vessels may enter the channel at First Bar Island which leads from the fairway into Cambridge Reach and so arrive at Whampoa Anchorage, where a depth of water of 20 feet and more can be counted on over a big area. Proceeding from the Anchorage up the Front Reach the first obstruction is the banks at Junk Island, with only some 8 feet at low water of extraordinary spring tides. The Front Reach, extending to Canton city, is very narrow and rocky and although the depths in the narrow 120-ft. channel are with one exception of a 7-ft. rock, 11 feet or more, the rocks, currents and the narrowness of the channel makes this passage extremely difficult for coasting vessels.

The minimum available high water at neaps being nearly 4 feet and the navigable depth in the Back Reach 9 feet at low water, a steamer drawing more than 13 feet cannot come into Canton Harbor every day of the year. At this the Tai Shek Shoal and the Taimei Point crossing must be passed at the time of the half or high tide by all ships drawing more than 9 feet. The present maximum draft of steamers which come up to Canton can, therefore, be put at about 13 feet, although the harbor now is visited occasionally by ships drawing 16 feet.

HARBOR IMPROVEMENTS.—The Board of Conservancy Works of Kwangtung Province* is considering a plan of creating a channel of a minimum depth of 16 feet below N.L.W. with a bottom width at this depth of 656 feet, and by restricting the width of the channel and partly closing the tributaries and branch channels to establish a self-maintaining channel from Canton Harbor to the sea. By carrying out the proposed works a continuous self-maintaining channel of at least 16 feet depth below N. L. W. level, and of at least 656 feet bottom width, is expected to be established between the lower end of Changshan Island and Canton Harbor. Vessels proceeding to Whampoa or beyond this point to Changshan Island, could then enter at any time on a draft of 18.5 feet; twice daily at 22.7 feet, and with spring tides at 26 feet; and at a draft of 13.5 feet could enter Canton Harbor at any time, at 17.2 feet enter twice a day, and at 19.8 feet enter with spring tides. The cost of the undertaking is estimated at $2,817,000, and Capt. Olivercrona, the Engineer for the Conservancy, proposes that this sum be derived by a tax of one-fourth of one per cent. upon the trade passing the Canton Customs, by which a sum of Tls. 50,000 could be raised annually, and this plus an annual contribution of Tls. 50,000 from the Provincial and Central Governments would wipe out the cost in something like five years.

PORT FACILITIES.—A list of the wharves is given below:

Owner	Designation	Length	Depth alongside L.W.O.S.T.
Butterfield & Swire	No. 1 (Iron T-headed)...	195′	18′6″
do.	No. 2 do. ...	220′	18′
do.	No. 3 do.	220′	14′
China Merchants Co.	Wood Wharf	90′	
Hongkong, Canton & Macao Steamboat Co.	No. 1 Block (Steel with concrete decking, screw piles)	142′	8′
do.	No. 2 do. ...	140′	8′
do.	No. 3 (T-headed)	65′	8′
Canton Steam Nav. Co.	Block Wharf (Steel with concrete decking) ..		8′
Hamburg-American Line	Steel Wharf	240′	15′
Government	Steel Wharf*	156′	13′6″
Canton-Hankow Railway	Wooden Wharf	60′	11′6″

* Not for merchant vessels.

There are two drydocks at Whampoa, owned by the Chinese Government, 430′ in length, 65′ at entrance, 16′ deep on sill; and 450′ in length, 75′ at entrance, 18′ deep on sill, respectively. They are not open to merchant ships, and are rather indifferently maintained.

PORT CHARGES.—All port charges are covered by the China Coast tonnage dues of 0.40 Haikwan taels per net registered ton, payable every four months.

PILOTAGE.—Pilotage is not compulsory.

MISCELLANEOUS CHARGES.—The stevedoring charges for loading and discharging cargo are about 10 Mexican cents per ton. The cost for overtime is about 50 cents Mexican per man

* See FAR EASTERN REVIEW, June, 1915; April, 1917; December, 1918.

from 6 p.m. to midnight and the same per man from midnight to 6 a.m. The cost of general labor is about 50 cents Mexican per man. There is no fixed rate for lighterage by the ton, but the rent of a 60-ton lighter is about $6 per day.

COMMERCE AND INDUSTRY.—It appeared at one time, in 1910, that the port of Canton was well on the way to the great prosperity that is the city's heritage from long contact with foreign trade and influence and the natural wealth of the country it dominates; for in that year the total trade of the port reached the record figure of Tls. 115,500,000. The vision of prosperity did not materialize, although in the disordered years that have passed since, beginning with the revolution in 1911, the trade has not been utterly destroyed as one might think would have been the result of internal strife, but has only been at a standstill or has fallen back slightly.

The value of the total trade from 1911 to 1917 is shown in the following table:—

1911	Tls.	105,108,122
1912	,,	96,076,716
1913	,,	112,285,888
1914	,,	105,296,323
1915	,,	103,817,195
1916	,,	109,081,638
1917	,,	102,844,340

Of the 1917 total, Tls. 27,308,250 represents imports of foreign goods, 20,129,237 the imports of native goods, and 55,407,453 the exports, of which 49,902,361 went to foreign countries. Some of the exports, principally those which go to foreign markets, are given in the following table:—

Article	Quantity		Value
Native cotton cloths and yarn		Tls.	1,017,036
Metals and Minerals			
Antimony, crude	4 piculs	,,	188
Antimony Regulus	8,882 ,,	,,	173,453
Antimony ore	11,060 ,,	,,	55,520
Lead in pigs	24 ,,	,,	331
Quicksilver	6 ,,	,,	1,533
Sodium Tungstate	2 ,,	,,	425
Silver	4,172 ,,	,,	117,801
Tin in slabs	1,916 ,,	,,	114,136
Tungsten ore	755 ,,	,,	34,120
Wolfram, crude	380 ,,	,,	17,187
Wolfram ore	4,132 ,,	,,	174,789
Sundries			
Arsenic	552	,,	6,072
Bags, gunny	3,294,504 pieces	,,	242,552
Canes	633,950 ,,	,,	4,900
Cantharides	266 piculs	,,	20,163
Cassia buds	2,795 ,,	,,	48,522
Cassia Lignea	55,464 ,,	,,	428,741
Cassia refuse	32,284 ,,	,,	163,097
Cassia twigs	17,140 ,,	,,	20,397
Chinaware, coarse	11,295 ,,	,,	200,260
Chinaware, fine	1,690 ,,	,,	72,095
Cinnamon	79 ,,	,,	5,280
Cocoanut shells	710,540 pieces	,,	1,050
Cotton, raw	2,232 piculs	,,	58,635
Curiosities	—	,,	3,790
Cutch	303 ,,	,,	2,255
Dyes, colors and paints:			
Cinnabar	39 ,,	,,	7,329
Dyestuff	73 ,,	,,	488
Dried indigo	8,331 ,,	,,	60,996
Lampblack	93 ,,	,,	596
Red lead	779 ,,	,,	13,227
White lead	2,474 ,,	,,	56,977
Yellow lead	8,412 ,,	,,	142,836
Nutgalls	3 ,,	,,	48
Sapanwood	21 ,,	,,	60
Turmeric	72 ,,	,,	525
Vermilion	116 ,,	,,	33,583
Green paint	107 ,,	,,	568
Unclassed paints	669 ,,	,,	7,074
Eggs, fresh	17,119,461 ,,	,,	144,146
Fans, fancy	84,494 ,,	,,	6,141
Fans, palm leaf, decorated	1,031,851 ,,	,,	24,333
Fans, palm leaf, trimmed	1,411,873 ,,	,,	18,306
Fans, palm leaf, untrimmed	1,019,956 ,,	,,	8,140
Fans, paper, plain	178,243 ,,	,,	5,864
Fans, paper, decorated	205,430 ,,	,,	6,484
Fans, silk	12,099 ,,	,,	4,288
Feather dusters	122,957 ,,	,,	6,073
Feathers, bird	29,155 ,,	,,	118
Feathers, duck, fowl, etc.	9,334 piculs	,,	91,933
Feathers, peacock	3,620 pieces	,,	1,422
Firecrackers and fireworks	37,076 piculs	,,	1,219,797
Glass bangles	3,435 ,,	,,	75,914
Glass bangles, decorated	4,705,627 ,,	,,	99,169
Sundries.			
Glue, cow	4,361 piculs	Tls.	102,703
Grasscloth, fine	169 ,,	,,	60,775
Grasscloth, drawn-thread work	32 ,,	,,	36,032
Grasscloth, embroidered	21 ,,	,,	24,256
Peanuts	1,305 ,,	,,	5,912
Peanut kernels	22,812 ,,	,,	103,566
Gypsum	13,463 ,,	,,	14,344
Hair, human	7,663 ,,	,,	215,885
Hides, buffalo	5,052 ,,	,,	215,316
Hides, buffalo and cow	3,853 ,,	,,	52,300
Hides, cow	2,775 ,,	,,	135,253
Horns, deer	324 ,,	,,	29,684
Hornware	95 ,,	,,	8,334
Ivoryware	25 ,,	,,	22,464
Jadestone	191 ,,	,,	13,125
Jadestoneware	54,295 ,,	,,	12,553
Joss sticks	13,767 ,,	,,	109,859
Lacquerware	341 ,,	,,	12,638
Leather	26,195 ,,	,,	1,406,672
Matting	44,146 rolls	,,	337,717
Peanut oil	5,792 piculs	,,	78,892
Sesamum seed oil	194 ,,	,,	2,287
Tea oil	411 ,,	,,	4,829
Wood oil	603 ,,	,,	6,669
Oils, essential:			
Camphor	413 catties	,,	95
Cassia leaf	219 ,,	,,	304
Cinnamon	180 ,,	,,	917
Clove	120 ,,	,,	439
Ginger	3,333 ,,	,,	3,140
Gum Benjamin	119 ,,	,,	337
Lucraban seed	99 ,,	,,	128
Peppermint	1,984 ,,	,,	7,641
Rose	72 ,,	,,	163
Sandalwood	88 ,,	,,	448
Miscellaneous	13,319 ,,	,,	3,178
Paper, first quality	4,139 piculs	,,	75,910
Paper, second quality	2,182 ,,	,,	18,307
Rattan core, puth, pulk and skin	4,490 ,,	,,	65,295
Rattan portmanteaus	11,853 pieces	,,	10,120
Rattanware	578 ,,	,,	14,336
Sance	2,211 piculs	,,	10,615
Silk:			
Raw, white and re-reeled and not steam filature	992 ,,	,,	603,225
Raw, white, steam filature	33,951 ,,	,,	28,135,086
Raw, yellow, not re-reeled and not steam filature	212 ,,	,,	92,644
Raw, wild, not filature	3 ,,	,,	240
Cocoons, whole	299 ,,	,,	32,903
Coccons, pierced	3,144 ,,	,,	217,690
Waste	41,941 ,,	,,	2,503,039
Punjum books reeled from refuse cocoons	323 ,,	,,	25,503
Piece goods	7,450 ,,	,,	6,620,556
Piece goods interwoven with gold and silver thread	21 ,,	,,	11,816
Drawn thread work	23 ,,	,,	25,235
Embroidery	143 ,,	,,	171,085
Embroidery, old	148 ,,	,,	64,315
Silk and cotton mixtures	558 ,,	,,	147,702
Silk and cotton mixtures interwoven with gold and silver thread	42 ,,	,,	17,826
Floss, Canton	58 ,,	,,	29,609
Fishing lines	4 ,,	,,	1,902
Ribbons	16 ,,	,,	12,501
Ribbons interwoven with gold and silver thread	10 ,,	,,	8,843
Thread	134 ,,	,,	69,352
Silverware	17,950 catties	,,	392,359
Socks, cotton	61,708 dozen	,,	53,590
Socks, silk	2,877 ,,	,,	13,227
Soy	1,063 piculs	,,	4,561
Sugar, brown	52,526 ,,	,,	248,448
Sugar, white	3,455 ,,	,,	22,630
Sugar cane	170,323 ,,	,,	192,586
Tallow, animal	2,482 ,,	,,	23,008
Tea, black	14,643 ,,	,,	465,355
Teapots	67,346 pieces	,,	23,050
Thread, gold, imitation	37 ,,	,,	6,600
Thread, silver, imitation	37 ,,	,,	4,796
Tinfoil	230 piculs	,,	25,924
Tobacco, leaf	48,768 ,,	,,	536,448
Tobacco, prepared	34,253 ,,	,,	1,014,231
Umbrellas, cotton	35,658 pieces	,,	25,556
Umbrellas, paper	106,297 ,,	,,	22,343
Wax, white	150 ,,	,,	11,901

Canton first became known for its exports of tea and silks. Its tea trade is declining, and seems to be on the way to extinction. Exports had fallen from 250,000 piculs in 1849 to 131,000 piculs in 1885, and after that year the total has fluctuated according to the cheapness of silver: if the price of Chinese silver cur-

rency fell as compared with gold, the Canton tea market had an advantage over the gold-standard tea-producing countries. When silver is high in price, the trade falls off, for Indian and Ceylon teas find the most favor in most of the markets of the world. In 1917 the exports of tea from Canton totalled only 14,643 piculs, due to the high price of silver. If silver continues to be high, the trade will be wiped out. On the other hand, the export of silk has steadily increased. The 1917 figure is remarkably good, considering that the price of raw silk increased from $890 to $1,100 per picul during the season due to the partial failure of both the second and third crops.

An excellent idea of the importance of other exports is given in the foregoing table.

The principal imports in 1917 are shown in the table below:—

Article	Quantity		Value
Piecegoods, etc.			
Cotton piecegoods		Tls.	3,331,363
Cotton yarn:			
Indian grey or bleached	57,983 piculs	,,	2,158,115
Japanese grey or bleached	33,845 ,,	,,	1,244,453
Other kinds	78 ,,	,,	6,060
On spools	161 ,,	,,	7,520
Dyed, mercerized or gassed	1,431 ,,	,,	103,845
Dyed, mercerized or gassed, Japanese	354 ,,	,,	26,493
Cotton thread on spools	33,332 gross	,,	70,865
Woollen and miscellaneous piecegoods		,,	673,653
Metals and minerals		,,	1,503,612
Sundries			
Sulphate of ammonia	3,440 piculs	,,	22,444
Asbestos, manufactured		,,	2,523
Bedsteads, iron	1,023 pieces	,,	15,646
Belting, machine		,,	17,348
Biscuits, tinned		,,	11,638
Bottles, empty		,,	38,472
Butter		,,	9,874
Buttons		,,	25,686
Canned goods:			
Evaporated cream	3,436 dozen	,,	22,195
Jams and jellies		,,	1,127
Condensed milk	53,384 ,,	,,	121,715
Rolled oats	8,618 ,,	,,	19,660
Vegetables		,,	6,961
Meats		,,	535
Hats, foreign	73,503 pieces	,,	16,399
Carborundum grains	286 piculs	,,	5,168
Cards, playing		,,	30,115
Cement	47,167 mille	,,	53,293
Cigarettes, 1st quality	17,668 ,,	,,	132,510
Cigarettes, 2nd quality	369,684 ,,	,,	1,035,115
Cigars	2,173 ,,	,,	39,114
Clocks	39,073 pieces	,,	45,924
Coal, Hongay	20,373 tons	,,	244,476
Coal, Japanese	61,015 ,,	,,	793,195
Coke	261 ,,	,,	6,872
Confectionery		,,	11,651
Cornelian stones, rough	405,360 pieces	,,	9,323
Dyers, colors and paints:			
Aniline		,,	80,315
Bronze powder	343 piculs	,,	24,442
Cinnabar	618 ,,	,,	104,152
False gambier	17,871 ,,	,,	74,709
Vermilion, imitation	325 ,,	,,	22,953
Electrical materials:			
Fans and accessories		,,	23,293
Unclassed		,,	171,266
Enamelled basins	8,793 dozen	,,	28,479
Enamelled cups and mugs	21,233 ,,	,,	47,065
Enamelledware, unclassed		,,	16,995
Flour	53,003 piculs	,,	219,707
Garter webbing, elastic		,,	6,502
Garters		,,	14,271
Gasolene	17,298 gals.	,,	9,023
Ginseng		,,	101,793
Glass:			
Broken glass	11,300 piculs	,,	11,738
Silvered plate	27,586 sq. ft.	,,	20,965
Unsilvered plate	44,962 ,,	,,	26,515
Colored	493 boxes	,,	12,108
Window	10,891 ,,	,,	84,167
Glassware		,,	18,178
Gloves	40,965 dozen	,,	24,743
Graphophones and accessories		,,	13,145
Peanut kernels	88,021 piculs	,,	333,041
Peanuts	12,627 ,,	,,	52,641
Hardware		,,	34,243
Hose, canvas and leather		,,	10,802
Hosiery	36,755 dozen	,,	16,922
Instruments and apparatus, Scientific		,,	17,563
Jadestone	3,932 piculs	,,	192,920
Kinematographs and accessories		,,	75,977

Article	Quantity		Value
Sundries.			
Lamps		Tls.	17,455
Leather, colored		,,	35,045
Leather purses	12,317 dozen	,,	14,521
Leather, sole	1,271 piculs	,,	16,735
Lime, chloride of	3,698 ,,	,,	29,103
Liquid fuel	5,045 ,,	,,	102,426
Liquorice	943 ,,	,,	24,579
Locks and padlocks		,,	16,735
Looking glasses	162,711 pieces	,,	9,623
Macaroni and vermicelli	13,945 piculs	,,	163,125
Machinery:			
Agricultural		,,	846
Textile		,,	12,532
Waterworks		,,	1,254
Unclassed		,,	87,713
Machines: sewing and knitting:			
Footpower	534 pieces	,,	19,595
Handpower	1,257 ,,	,,	29,705
Matchmaking materials:			
Chlorate of potash	1,560 piculs	,,	87,432
Phosphorous	110 ,,	,,	16,316
Wood shavings	8,945 ,,	,,	29,413
Wood splints	13,715 ,,	,,	42,516
Matches:			
Japanese	546,590 gross	,,	251,213
Medicines:			
Quinine		,,	19,527
Molasses	51,773 piculs	,,	69,429
Needles	86,432 mille	,,	71,132
Oils:			
Engine, mineral	226,925 gallons	,,	61,829
Kerosene, American	870,000 ,,	,,	256,729
Kerosene, American, in bulk	7,199,632 ,,	,,	1,669,035
Kerosene, Borneo, in bulk	1,376,595 ,,	,,	224,736
Sumatra	367,500 ,,	,,	109,221
Sumatra, in bulk	2,504,537 ,,	,,	606,372
Paper:			
Cardboard	3,520 piculs	,,	11,532
Packing	818 ,,	,,	10,667
Calendered and sized	3,313 ,,	,,	79,324
Uncalendered and unsized	44,709 ,,	,,	327,237
Writing	493 ,,	,,	13,317
Other kinds		,,	103,021
Perfumery		,,	70,196
Photographic materials		,,	27,013
Printing ink	764 ,,	,,	13,521
Rattan core	11,170 ,,	,,	45,014
Rattans, whole	41,303 ,,	,,	273,372
Saltpetre	1,270 ,,	,,	17,200
Sandalwood	1,525 ,,	,,	21,356
Sandalwood cuttings	2,169 ,,	,,	19,112
Seed, apricot	641 ,,	,,	17,117
Seed, melon	1,657 ,,	,,	21,112
Seed, sesamum	2,727 ,,	,,	19,921
Sharks fins, black	143 ,,	,,	9,447
Shoemaking materials		,,	47,142
Shoes, leather	6,739 ,,	,,	11,128
Shooks for making casks		,,	37,921
Singlets and drawers:			
Mixed cotton and wool	64,673 dozen	,,	177,452
Sweaters	3,191 ,,	,,	21,931
Fleece lined underwear, etc.	40,457 ,,	,,	167,921
Soaps, bar	9,665 piculs	,,	111,237
Soap, toilet and fancy	65,264 dozen	,,	35,895
Socks:			
Cotton, 1st quality	6,461 ,,	,,	17,237
Cotton, Japanese, 1st quality	167,917 ,,	,,	123,594
Cotton, Japanese, 2nd quality	25,695 ,,	,,	14,191
Soda ash	2,525 ,,	,,	15,784
Soda, bicarbonate of	1,964 piculs	,,	17,197
Soda, caustic	992 ,,	,,	12,427
Soda, crystal	1,672 ,,	,,	8,362
Soda, nitrate of	1,691 ,,	,,	19,175
Stores, engineers		,,	6,137
Stores, household		,,	52,634
Sugar, brown	2,302 ,,	,,	11,122
Sugar, white	255,063 ,,	,,	1,527,415
Sugar, refined	12,431 ,,	,,	101,154
Sugar, candy	2,221 ,,	,,	15,779
Sulphur, crude	3,216 ,,	,,	16,060
Telegraph materials		,,	2,316
Typewriters and accessories		,,	3,475
Umbrellas and parts		,,	41,907
Umbrella frames	20,133 pieces	,,	61,203
Umbrellas:			
Cotton	16,362 ,,	,,	11,467
Wax, Japan	962 piculs	,,	14,531
Wax, paraffin	6,013 ,,	,,	72,419
Wax, white	537 ,,	,,	77,129
Ale and beer in bottles	20,376 dozen	,,	47,777
Brandy in bottles	3,149 ,,	,,	51,541
Whisky	1,709 ,,	,,	13,092
Rectified spirits or alcohol	131,256 gals.	,,	56,770

The foregoing table lists, generally, those imports reaching a valuation in five figures, while certain imports of lesser value are shown for special purposes. The following notes may make the table somewhat clearer:

Continued shortage of foreign textiles and knitted goods led to the large imports of cotton yarn noted. The yarn is used in knitting and weaving mills, and for hand weaving.



SAMPANS ON THE RIVER AT CANTON

The imports grouped under "Metals and Minerals" consist of such goods as brass sheets and plates used in boatbuilding and in native handicraft, copper for the same purposes, nails (reaching in value nearly Tls. 100,000), pipe, plate cuttings, rods, sheets and plates, wire, wire rope, galvanized iron shapes, rods and plates, galvanized wire, pig lead, tin in slabs, zinc, and generally all the metals used in boatbuilding.

"Asbestos, manufactured," comprises asbestos packing of various kinds for use in industries and on ships.

The large importation of machine belting is remarkable, considering the few factories in the neighbourhood, and can be understood in view of the short life of belting in Chinese factories due to lack of engineering knowledge on the part of the operators; abuses being the overloading of belts, shafts running out of line, belt-shifters out of alignment, and so forth.

The Chinese appetite for butter and condensed milk is shown by the large importations. These two dairy products are much appreciated by natives of the better class: cheese, however, is decidedly unpopular with all Chinese, and it is probable that the small imports of 21 piculs was for the use of the few foreigners in the Canton delta and for supplying passenger vessels.

"Carborundum grains," the import of which amounted to 286 piculs, is used for polishing jade and generally by lapidaries.

Coal and coke imports are rather less than usual, due to the high price which in turn is due to the high ocean freights. Hongay coal is from Indo-China, and Japanese coal, of course, from Japan ports. Coal has been extremely high in China for the past two years, but the Chinese have not taken advantage of the opportunity to develop their immense deposits of the fuel. Coal that formerly sold in Canton for $12 a ton now sells for $32.

Playing cards reached the surprising value of Tls. 30,115. Poker playing is taking the place of the old-fashioned gambling games of the Chinese, and in Kwangtung Province poker is highly popular with natives who have returned from abroad and their friends. Almost any foreigner who has "held a hand" in a Chinese poker game will testify that they understand it very well.

"Ginseng" is one of the most highly prized medicines of the Chinese. The detailed list of imports into Canton shows that 8 catties (1 catty=1⅓ pound) of the best quality American ginseng was valued at Tls. 172. In quantity Korean ginseng led with 235 piculs value at Tls. 19,662. The foreign pharmacopoeia grants it only a slight trace of medicinal action, but it is highly esteemed by Asiatics.

"Broken glass" is melted down and blown into Chinese trinkets, lamp chimneys, and other articles.

"Graphophones and accessories" enjoy great popularity in the Canton market as elsewhere. Master records are made in various Chinese musical centres, always, of course, of Chinese music, and moulded abroad.

Jadestone imports of only Tls. 192,000 lead to the suspicion that all the "jade" ornaments purchased by tourists are not genuine, or that there is an enormous profit in the manufactured article, for almost any one of the leading shops in Canton sells jade each year of greater value than the imports given in the table.

Quinine imports, reaching the value of Tls. 19,527, show that the Cantonese widely appreciate at least one foreign medicine. As a matter of fact, "Kum kai nap-sung" (the native name for quinine, translating into "Gold chicken powder," probably so-called because the first importations bore a trade mark in gilt looking something like a fowl) is known and trusted by nearly all the natives in the malarial Canton Delta.

The importation of needles, valued at Tls. 71,133, linked with the importation of sewing cotton, which amounted to Tls. 70,865, shows the large purchasing power of the Chinese for their small actual necessities. Even foreign needles are too dear for untold numbers of seamstresses, although in some of the poorer districts needles may be purchased singly, and old women who make a miserable existence in patching clothes may be seen making coarse stitches with crude thread and clumsy native needles of iron or bone. High-caste ladies formerly used needles of jade or gold. Many of the needles imported into Canton are used in the making of embroidery.

The imported sandalwood is used for making fans and other novelties, and sandalwood cuttings are used in the manufacture of rare incense.

Under the heading of "seed" may be noticed apricot, melon and sesamum seed. Apricot seeds are roasted and salted and in this form appear in a tiny dish by each place at feasts in native restaurants, where they are given the same name as almonds, although this may be due to the loose terminology of the language and no deception may be intended. Melon seeds are soaked in salt water and dried in the sun, and the tiny kernel is eaten in theatres, on outings, at entertainments and feasts, and during the New Year holidays. Sesamum seed are used in Canton principally in cooking.

Shark's fins are the dorsal fins of certain sharks found in Southern waters, and a soup made of them is the *piece de resistance* of every feast at which wealthy Chinese congregate. Shark's fin soup is valued by the Chinese as a stimulant; to the foreigner it seems a tasteless and ill-odored mess.

Large imports of socks may be noted, and in addition to this article reaching the Canton market through importation a huge quantity is made in the local knitting factories and on hand knitting machines. Chinese men, women and boys wear socks, for long stockings are not needed where both sexes of all ages wear trousers taped about their ankles.

The figures of umbrella importations point to a preference for umbrellas of the foreign style rather than the native article made of paper. Frames are imported from England and from Japan and covered in Canton.

Ale and beer importations totalled 20,385 dozen bottles, brandy 3,149 dozen bottles and whisky 1,309 dozen bottles. In addition, about 8,000 dozens of other kinds of liquors passed through the port in the same year. It is not correct to assume that the handful of foreigners in Canton consumed more than an extremely modest share of these imports, and the foreigners in the interior are mostly missionaries, so the conclusion is reached that the Chinese have acquired an appetite for foreign intoxicants. There is no doubt about it; the wealthy Chinese in Kwangtung like foreign liquors and consume all they can afford, brandy being the favorite drink and the measure being up to a tumblerful, more or less, taken "neat."

INDUSTRIES.—Among the modern industries of the port may be mentioned the following:

The Government arsenal, with an estimated output of 35 rifles, 3 machine-guns, and 60,000 cartridges per day.



VIEW OF THE RIVER, CANTON

The Government Brick and Cement Works, founded in 1909. The output of cement is about 500 barrels of 400-lbs. per day. In 1917 the output was 96,000 barrels, 66,000 casks being disposed of locally, 2,000 casks going abroad, 3,000 casks being shipped to Foochow and Swatow, and the remaining 25,000 casks being taken by Hongkong. There is a brick factory attached to the works. The plant suffers from the competition of the Green Island Cement Co., of Hongkong, which is under foreign management.

The Yu Yick Brick Factory, opened in 1911 and equipped with modern machinery, is owned by the estate of Chang Pi-shih, the famous millionaire of South China. Following his death, the plant was closed in June, 1917, and his not been reopened.

The Whampoa Cotton Weaving Factory, operating 40 Japanese looms weaving mostly 12s. and 16s. yarn obtained from Japan, 60 hand looms weaving finer counts, and some 200 hand looms issued to workers weaving in their homes.

The Ya Tung Cotton Weaving Factory, operate 100 Japanese looms and Japanese subsidiary machinery.

The aerated water factory of A. S. Watson & Co. has a capacity of 250 dozen bottles of water daily.

The firm of Hip Tung Wo, who make exact copies of Bolinder crude-oil internal combustion engines of the semi-Deisel type, both marine and stationary. These copies in 20 to 80 H.P. are in operation; no efficiency test has been made of them, but they seem to run with a fair degree of success.

Hip Tung Wo make crude oil engines and Quam Wo On make suction gas engines. Several smaller works have sprung up in Honam.

The Canton Electric Supply Co., with a plant capable of supplying 2,600 kilowatts, the plant mainly of British make. An order for a plant costing $1,500,000 has been placed with an American firm, and delivery is looked for by May, 1919.

The Li Ming Mirror Factory, in Honam, manufacture mirrors from imported glass. The output is about 50 square feet per day. The American machinery was installed by a British firm.

The Canton Ice Factory.

Canton Tannery and Leather Works opened in 1910 under joint government and merchants' management, and employed a foreign instructor for a time. The plant is in bad condition. Owing to bad management the concern was never a success and has ceased work.

The Hao Ming and four other match factories.

The Government Mint.

The Min Yuen Paper Factory, formerly a Government concern but now under control of merchants. The output is about 10,000-lbs. daily, of paper suitable for native newspapers and for native packing purposes.

Numerous silk filatures.

A telephone system under the Chinese Telephone Administration.

The Canton Waterworks, opened in 1908. Total cost about Tls. 1,300,000. The Company has regularly paid a dividend of from 5 to 8 per cent. Since October, 1915, when the Government put its shares on the market owing to financial stringency, the plant has been under the control of merchants.

Several factories for knitting stockings, underwear and singlets from imported yarns.

MERCHANTS.—Arnhold Bros. & Co., Ltd.; Butterfield & Swire; Deacon & Co., Ltd.; Herbert Dent & Co.: Dodwell & Co., Ltd.; Getz Bros. & Co. of the Orient, Ltd.; T. E Griffith, Ltd.: Hogg & Karanjia, Ltd.; W. G. Humphreys & Co.; Jardine, Matheson & Co.; Ltd.; Mitsui Bussan Kaisha; Patell & Co.; Reiss & Co.; Shewan, Tomes & Co.

Wuchow

Wuchow, the gateway to Kwangsi and the eastern part of Yunnan Province, is the head of steam navigation on the West River, 220 miles above Canton. It is in Kwangsi Province near the border of Kwangtung, at the point where the West River is joined by the Kwei (or "Cassia") River. Wuchow is a growing city of 40,000 persons.

The West River here is subject to wide variations in height, the range of rise and fall being ordinarily 60 feet and in times of flood some 75 or 80 feet. For this reason foreign firms, the Customs and Government offices, have their offices in pontoons in the stream, and foreigners make their homes in similar pontoons or boats. River steamers from Canton and Hongkong do not proceed further in the West River beyond the port, and traffic for points above is carried by several shallow-draft steamers and by numerous junks and launches. Kweihsien, 150 miles above, and Nanning, 200 miles above Wuchow, are important markets served by transhipment in this manner. There is also junk traffic up the Kwei, where Kweilin is a flourishing market.

Wuchow is equipped with an electric light plant, which is taxed to capacity. The demand for electric lighting has extended throughout the province, and three new plants at Kweilin, Liuchow and Pinglo were erected in 1917.

Kwangsi Province is yet without railways, but there are several lines projected. One of these would connect at Samshui, in Kwangtung Province, with the short line which extends from Canton, proceeding to Wuchow and Kweilin and thence into Hunan Province where it would join the Canton-Hankow line at Chuchow. Another proposed line would extend from Wuchow to the interior of Kwangsi, touching Sunchow and Liuchowfu, and join the first line mentioned at Kweilin.

Wuchow is at present well connected with Canton by a daily steamer, making the journey in four days, and with Hongkong by fourteen steamers.

COMMERCE AND INDUSTRY.—Since the opening of Wuchow to foreign trade in 1897, with its attendant advantages, its commerce has had a steadily growing tendency. Its prosperity was maintained even in 1917, when the high price of silver had a restraining effect upon exports. In that year exports of native goods totalled Tls. 5,956,145, and in the same period imports of foreign goods amounted to Tls. 7,868,397 and of native goods Tls. 1,665,625.

Of late years antimony regulus and antimony ore have been articles of export of some importance, although the export of both articles fell off in 1917 as compared with 1916. Exports of antimony in 1916 totalled 6,974 piculs; in 1917 the total was but 1,892 piculs. In the same period exports of antimony ore fell from 47,527 piculs to 17,898 piculs. Manganese, which appeared on the list of exports first in 1916 with a total of 220 piculs, appears this year with total export of 56,740 piculs. Quicksilver, which likewise was exported for the first time in 1916, was exported in 1917 to the amount of 23 piculs. Tin has kept its place fairly well with exports of 7,893 piculs. Other important exports to foreign countries are shown in the following table, with the quantities passed through the Maritime and Native Customs given separately:—

	By Maritime Customs.	By Native Customs.
Hemp fibre	4,879 piculs	5,056 piculs
Hides	21,147 ,,	587 ,,
Indigo, liquid	48,725 ,,	26,984 ,,
Leather	7,238 ,,	
Nutgalls	2,054 ,,	174 ,,
Cassia-leaf oil	27 ,,	1,686 ,,
Peanut oil	907 ,,	8,478 ,,
Tea oil	31,679 ,,	15,035 ,,
Wood oil	59,934 ,,	21,756 ,,
Silk, raw	41 ,,	1,591 ,,
Silk cocoons	134 ,,	2,479 ,,
Silk fishing lines	95 ,,	
Skins (furs), Mouse-deer	10,024 ,,	
Tallow, animal	1,324 ,,	
Bones, buffalo and cow		17,022 ,,
Bristles		120 ,,
Cassia buds		2,091 ,,
Cassia Lignea		17,092 ,,
Cassia refuse		7,228 ,,
Cassia tubes		3,784 ,,
Firecrackers		23,046 Taels
Peanut cake		75,178 piculs

INDUSTRIES.—Wuchow has a steam silk filature, established in 1911, which is equipped with antiquated machinery imported from Italy; a weaving mill for manufacturing cloth in the foreign style with Chinese looms of the ancient fashion; a factory for knitting hose in foreign style; and several glass factories which import broken glass from Hongkong and remelt it. The building of junks and smaller vessels in the Chinese style is an important industry as well.

MINING.—Coal, asbestos, antimony, galena, platinum, silver, tin, iron, lead, zinc and arsenic have been discovered in Kwangsi, but the deposits have been developed to only a slight extent. Some of the metal and ore produced in the Province and exported through Wuchow shows up in the statement of exports given above. The mining of antimony seems to have become fairly important in recent years. The ore is melted in crude

blast furnaces, resulting in a product which is about 65 per cent. antimony and 30 per cent. sulphur, which is sent to Hongkong for refining.

In August, 1917, a manganese mine was opened at Wuhsuan, on the Liuchow River, and this mine is now producing. The owners secured a contract from Hongkong sources for a total of 4,000 tons of ore, and are making deliveries under it. It is understood that the mine is a profitable one.

HARBOR IMPROVEMENTS.—So far as the trader at Wuchow is concerned, he has a very definite grievance every year, for his goods must be transhipped from steamers to lighter craft during the dry season. At a place called Suntan, about 22 miles from Wuchow, there is a silt deposit forming a bar; and whenever the water level at Wuchow registers on the Customs gauge 3 feet, the bar stops traffic for all vessels drawing over 8.5 feet of water. Then the cargo must be moved into smaller craft in order to transport it to Wuchow. Two years ago a commercial association in Wuchow arranged and paid for dredging undertaking; no rocks were encountered. The stratum of the river is built up chiefly of fine sand intermixed with clay. When at rest the material is fairly compact, but it soon liquefies if it is stirred up in the water.

The practical problem is to arrange that vessels of at least seven feet draft shall be able to proceed right up to Wuchow every day of the year. As a fact, if certain new proposals are carried out, that will be possible; while vessels of 13 feet draft will be able to cross the bar for at least 297 days each year. At present a provisional Customs station is established at Suntan and in 1916 it was at work for 130 days, while in 1917 it was at work for 158 days. Before then the average was much less, about 68 days and it is suggested that the bar has been silting up more rapidly of late.

It has been discovered by practical experience that dredging of itself, is not sufficient to keep the channel clear. It is proposed, therefore, to put in training works, which will cause the water to scour out the channel required. Dredging will also be carried out in conjunction with the training works. The training works are to consist of "cribs," so as to restrict the channels. The only constructional work involved is the building of the cribs, the effect of which will be to increase the velocity of the stream. The technical details involved are comparatively simple and will only be of interest to civil engineers who are engaged in similar work, and they will find nothing unusual in the details. It, therefore, only remains to express the hope that, for the sake of trade on the West River, the plan will be carried out quickly. As the great difficulty in connection with all new engineering work in China is finance, especially during the war, it may be well to state at once that the total cost of the work is not large, for it is estimated at $116,000, And as Wuchow trade will benefit very greatly from the proposed improvement, it is suggested that the Maritime Customs authorities should impose a tax of 9.25 per cent. on the trade value of that port, which, according to the Maritime Customs Trade Report for 1917, amounted to Haikwan (Customs) Tls. 15,490,167. Thus a 9.25 per cent. tax would produce a sum of Haikwan Tls. 38,700 or $62,000 and, therefore, the new work would be paid for in two years. It is said that the annual loss owing to the stoppage of traffic on the river, is valued at $35,000 and, therefore, the sum saved in four years would pay for the whole of the works. This is mentioned to show that the traders at Wuchow are sure to favor the carrying out of these proposals.



THE PORT OF WUCHOW, KWANGSI

Nanning

The port of Nanning, opened to foreign trade in 1907, is situated on the left bank of the Nankiang, at the junction of the Yukiang and Tsoliang, 368 miles above Wuchow and 250 miles below Lungchow. It is a prefectural city of 25,000 inhabitants and ranks as the second largest of the three open ports of Kwangsi. The city lies in the centre of a wide and fertile plain in a sharp bend of the river, and is accessible by the ordinary steam river launch only during the very irregular times of high water. A serious obstruction to the speedy development of the trade of Nanning is the difficulty of river navigation. In addition to 22 rapids the river bed between Nanning and Wuchow is strewn with countless rocks. Therefore, unless extensive river improvements are carried out the terminus of all heavy steam traffic must remain at Wuchow. French interests hold a contract for the construction of a railway which would touch the seaboard at Yamchow, in Kwangtung Province, and proceed through Nanning to Yunnanfu, in Yunnan Province, thence to Suifu, in Szechuan Province above Chungking; to Chengtu, in Szechuan Province: and thence to Tungkwan, in Honan Province, where the line would connect with existing railways, and on to Tatung. The actual construction of the French railways lies with the future.

The trade of the port is entirely with other Chinese ports, principally Wuchow, and the port has no direct dealings with foreign countries. The trade of Nanning in 1917 was as follows:

	Tls.
Imports of foreign goods	2,759,848
Imports of Chinese goods	909,138
Exports of Chinese produce	3,330,380
Total ... ... Tls.	6,999,366

Of the 1917 trade, the Commissioner of Customs remarks:—

The year has been a period wherein disturbed domestic politics and financial stringency have been the prime factors affecting all business interests. The weakening tendency of prices rendered business in aniseed oil, the principal commodity of export, extremely difficult. Shipping profits have been indistinct, and the shareholders are likely to get very little return. The total number of vessels running during the year amounted to 39, and everything points to the fact that at last supply has overtaken the demand.

Principal exports in 1917 were as follows:—

Minerals:		
Antimony, crude	219	piculs
Antimony, regulus and refined	1,157	,,
Antimony ore	29,773	,,
Sundries:		
Aniseed, star	22,103	,,
Beans	107,309	,,
Cardamons	74	,,
China root	195	,,
Cinnabar	3	,,

Minerals :		
Feathers	1,149	piculs
Feathers	1,149	,,
Firecrackers	659	,,
Fungus	2,408	,,
Groundnut cake	21,524	,,
Hides, buffalo and cow	16,403	,,
Honey	664	,,
Horns, buffalo and cow	763	,,
Leather	11,498	,,
Nutgalls	437	,,
Oil, aniseed	5,639	,,
Oil, wood	22,290	,,
Seed, sesamum	306	,,
Skins (Furs), mouse-deer	21,264	pieces
Sugar, brown	28,727	piculs
Sugar, white	13,834	,,
Tobacco, leaf	12,144	,,

Shipping in 1917 totalled 1,490 entries and clearances of steamers, totalling 78,177 tons; 690 entries and clearances of sailing vessels, totalling 15,985 tons; and 1,113 entries and clearances of launches, totalling 47,436 tons.

Lungchow

Lungchow, the smallest of the three ports of Kwangsi open to international trade, is situated on the Tsokiang (Left River), in the extreme southwestern corner of the province, and has a population of 12,000. It was opened to trade in 1889, when a growing importance was predicted for it. The district in which Lungchow is situated is well watered and comparatively productive. Corn and rice are grown in all parts of it, and sugar, potatoes, beans, indigo, groundnuts, aniseed and camphor less generally throughout. There are no important mines and no large manufacturing industries either in the city itself or in its neighborhood.

The greatest drawback to the trade of the district has been, in the past, and still is, the imperfect means of communication which it possesses. It has at its service, for direct trade with Nanning, Wuchow and Kwangtung, only the Tsokiang; and for its direct trade with Tonkin, only the two small streams which combine to create the Tsokiang. For the rest, it has to depend upon porters. The navigation of the Tsokiang to Lungchow is possible only for shallow draft vessels, and by these for only a part of the year. Several smaller affluents of the Tsokiang flow north and south through the district and are of some assistance to its distributing trade: The navigation of the Tsokiang to Lungchow is possible only for shallow draft vessels, and by these for only a part of the year.

It will be observed that a possible trade route from Lungchow is in the railway on French (Indo-China) soil which terminates at the border, and extends to the Indo-China coast through Hanoi

The trade of Lungchow through the Maritime Customs has never been of importance. The total in 1908 was Tls. 232,452; the next year it was Tls. 314,412; and in 1910 it leaped to Tls. 880,258. In 1911 the total had declined to Tls. 257,196, and since that year the largest figure was in 1914, when the trade was valued at Tls 124,899. In 1915 it was 110,991; in 1916 78,824; and in 1917 Tls. 57,081.

The Commissioner of Customs accounts for the decline since 1914 by political unrest in China and the French Government's prohibition of the export of nearly all the commodities of Tonkin origin. In spite of important schemes for the improvement of the trade routes between Lungchow and the sea through Tonkin and other parts of Kwangsi Province, the present lack of easy land communications is another factor which accounts for the small trade of this port.

The trade with Tonkin by the two small rivers which meet at Lungchow and form the Tsokiang is carried on by small boats of an average carrying capacity of 4 tons, and by rafts. During 1917 364 of these small craft, with a total tonnage of 1,456 tons, entered and cleared. Rafts totalled 168. Entries and clearances from Nanning totalled 335 motor-boats, aggregating 15,359 tons. Six vessels now ply between Lungchow and Nanning. Porters engaged in the Frontier trade in 1917 totalled 429 inwards and 34 outwards.

The value of the foreign imports in 1917 was Tls. 52,551; the native exports Tls. 4,530; the total trade Tls. 57,081.

Kongmoon

Kongmoon, a treaty port opened in 1904, is one of the ports of the West River delta, being situated on that stream above the point where it empties itself into the sea. Rising in the highlands of Yunnan, the West River carries a great burden of sand and earth eastwards and deposits it in the quiet waters of the sea, studded with countless isles, forming an ever advancing delta. Kongmoon was once on the sea, as its name (" Door of the River ") would indicate, but now it is 30 miles inland, at the apex of the delta, formed here like a fan. The physical features of the surrounding country bear testimony to the manner of its creation: what were islands are now inland hills, jutting up from flat plains of great fertility which are irrigated by a maze of waterways, carrying craft of every description, till every stream is a laden highway. Out of every river bed and even from trenches opened in the paddy fields limitless supplies of oyster shells are dug up for the manufacture of lime, giving further proof that in past ages the sea covered the area that is now far inland, covered by crops and netted with fresh-water streams. The delta has five entrances, and Kongmoon lies on a narrow, deep, swift-flowing creek which links up the waterways of all five mouths.

Nowhere in China may be seen craft so closely packed as in the Kongmoon Creek. Sea-going steamers appear high above native craft; great junks in the trade with Singapore and the Indies, armed with heavy guns for protection against pirates, lie at anchor; steam launches with bullet-proof shields about the steering wheel; cargo junks laden with all the varied commerce of China; boats with perforated sides carrying live fish in their flooded holds; rafts of timber or bamboo; all these crowd the stream in confusion.

When Kongmoon was opened to foreign trade the Custom House was established two miles away, near the northeastern entrance to the creek, on the right bank of the West River. It is on this spot that the foreign settlement is springing up. Opposite this is a good anchorage, so that vessels of large tonnage need not enter the creek at all, but may have passengers and cargo brought to and from the native city in junks and sampans. Kongmoon is lighted by electricity, and other towns in the region also have electric lighting and other modern facilities.

It is through Kongmoon that many emigrants leave for foreign countries, in the past to America and Australia and now to the countries that are open to Chinese immigration. Returning to their homes in the region about Kongmoon, these emigrants have brought with them progressive Western ideas and the capital to develop them. For instance a native of the district, who returned from America after he had amassed a fortune there, designed and constructed a railway between Kungyik and Sanchiahai, on the seacoast, passing Sunning on the way. The entire work of construction was effected without the aid of foreign engineers or foreign capital, the Chinese gentleman mentioned having acted as engineer-in-chief and manager-in-chief as well as furnishing the largest share of the capital. All the capital of the railway was subscribed by emigrants from the region who now reside in America or by those who have returned.

Kungyik, the terminus of the Sunning Railway, is a new town, created in 1907 by wealthy returned emigrants. The town is situated on the west bank of the Sunyeung River, 22 miles from Kongmoon. The inhabitants number 2,000, most of whom wear European dress and follow European customs, and their houses are of foreign style. The town is lighted by electricity and has many other improvements. Across the Sanyeung River is Shuihau, which, although facing the progressive settlement of Kungyik, remains like any conservative old Chinese town Sunning, an hour and a half by rail from Kungyik, is a prosperous market, also affected favorably by the presence of large numbers of returned emigrants.

A railway has been constructed from Kongmoon which connects with the Sunning Railway at Kungyik, thus making possible through traffic from Kongmoon to the seacoast at Sanchiahai. A ferry vessel, 350 feet long and 55 feet wide, with a capacity of 15 cars, has been purchased for ferrying trains across the Southwest River at Niuwan.

COMMERCE AND INDUSTRY.—The principal exports are gunny bags, eggs, palm-leaf fans, firecrackers and fireworks, oranges, Chinese wine, samshu, and many other articles which do not enter foreign trade to any extent. The value of exports in 1917 was Tls. 1,401,385.

Importations amounted to Tls. 3,777,248 in 1917, and these included foreign products that do not appear among the imports of the usual Chinese city, due to the wider taste of the returned emigrants.

These figures include only goods passing in foreign ships. The junk trade amounted to Tls. 4,098,414 in the same period.

TRANSPORTATION FACILITIES.—Kongmoon is in a network of waterways putting it in communication with Hongkong, Canton, and the hundreds of Chinese markets in the West River Delta. There is frequent steamer service to Hongkong, one line furnishing two sailings daily.

PORT FACILITIES.—The anchorage for steamers is immediately above the Custom House, off the right bank of the West River, where a minimum depth of 12-13 feet is found with the water-mark at zero. Small steamers, launches and junks go directly into Kongmoon Creek and anchor off the native city. The depth of the creek, which is from 150 to 250 feet wide, varies from 7 to 8 feet at the upper entrance to 20 to 25 feet in other places. The range of the annual rise and fall at Kongmoon is 12 to 13 feet. In winter the daily rise and fall of the tide averages 4 feet at spring tides. In summer, when the river is higher, the difference between high and low tide is smaller, sometimes even less than a foot.

Macao

Macao is a Portuguese colony. It is situated in lat. 22 deg. 11 min. 30 sec. N., long. 113 deg. 32 min. 30 sec. E., on a rocky peninsula jutting westwardly from the large island of Heungshan, in Kwangtung Province. Heungshan Island is on the west side of the Canton (or Pearl) River estuary. Macao is 40 miles distant from Hongkong, which is on ths east side of the same estuary. The population is 71,021, with 3,845 foreigners.

The Portuguese took up their residence at Macao in 1557, but Macao was known to European seafarers long before this as a safe haven of refuge. History relates that the Portuguese obtained a footing on the peninsula under the pretext of drying cargo which had been damaged by the sea, and were permitted to erect buildings on the payment of Tls. 20,000 to the Chinese Government, during the Ming Dynasty. Shortly afterward the settlers earned the gratitude of the Chinese through attacking and driving away with armed ships the pirates who were blockading the port of Canton and then clearing the surrounding waters of pirate junks, and as they submitted unquestionably to Chinese authority they enjoyed the use of their port thereafter without serious molestation. In 1662 the new Manchu *régime* made a fresh arrangement with the settlers by which they were to pay Tls. 500 annually for the use of their territory, while their movements were restricted by the construction of a barrier across the peninsula about 40 miles east of the city, the gates of which were opened on certain days in the month for the passage of supplies and food In 1848 the Portuguese governor refused longer to pay the rental and drove out the Chinese custom house and with it every vestige of Chinese authority. Six years previously the British traders had forced the opening of the five original treaty ports and the cession of Hongkong to Great Britain. In 1887 China recognized the sovereignty of Portugal over the peninsula.

Before the cession of Hongkong, Macao was a city of importance, and was particularly so prior to the establishment of the foreign traders at Canton. However, with the opening of Hongkong as a British colony the prestige of Macao rapidly began to decline. Its revenues are now derived largely from gambling establishments where a native game known as "fantan" is practiced, and from lotteries.

The fantan monopoly was put up at auction on July 1, 1916, and the privilege was sold to a Chinese syndicate for a term of five years at a payment of $1,286,660 Mexican per annum. The individual who had previously held the monopoly at an annual fee of $603,000 unsuccessfully offered $1,218,660 for the renewal.

As fantan is the principal "industry" of the colony, a description of the game will not be out of place. The name is made up of the Chinese words *fan tan*, i.e., "quadrated cash,"



MACAO HARBOR NARROWS

cash in this instance meaning the small Chinese coin of which about 1,350 make up a Mexican dollar. The game is begun when the dealer has transferred several handfuls of the "cash" or counters from a large receptacle to the table before him and covered the pile with a bowl, when betting begins, the object being to guess the number of cash remaining on the final sweep of a long and slender stick held by the dealer as he separates four cash at a time from the pile and pushes them aside. If four cash remain on the final sweep, four is the winning number; three cash remaining, three is the winner; and so on. Bets are laid according to the fancy of the players, and when the betting is finished the dealer removes the bowl and begins the process of separating the pile of counters in lots of four. If two cash remain for the final sweep, the bets on No. 2 are paid at the ratio of 3 to 1, but as it is almost inconceivable that a Chinese would transfer money without making a deduction of some sort it is not surprising to learn that a reduction of 10 per cent. is made on all bets paid. The gaming table is on the ground floor, and above this is a mezzanine floor or balcony in which players who do not wish to mingle with the dense crowd about the table may seat themselves in comfort. Servants bring about tea, tobacco, fruit, and the dried melon seeds which Chinese are fond of munching in their hours of leisure, and serve the patrons without charge. Fantan houses which cater to foreigners often provide foreign liquors and tobacco in the same way. The players in the balcony hand their bets to the servants, who lower the money in a tiny basket to the cashier at the gaming table below.

It appears that the game yields a huge profit for the Fantan Syndicate, on the principle that players will persist in their efforts so long as they have the money with which to play, which means that they never stop when winning but only when "broke." A foreigner who had won rather heavily one day was cordially asked to "come again," as he passed out the door, by the old Chinese watchman. "No, John!" he replied, "I catch plenty your money; you no want me come back!" With the characteristic bluntness of pidgin English speech, John calmly remarked "S'pose you *come back*, never mind!" thus summing up the strength of the Fantan Syndicate's position, which does not rest upon "odds" or "percentages" but on human frailty.

The city is built on the side of a hill, about 300 feet high. The peninsula on which it is situated is separated from the mainland by a narrow strip of sand, across which an arch is built which roughly marks the limit of the Portuguess possession. Macao is extremely picturesque. Its gaily painted buildings give it an air of quaintness, and its charm heightened by remarkably clean and neat streets and parks and gardens of tropical luxuriance. The climate is never excessively hot, due to the cooling sea breezes, and is never cold. Macao has been called "The Gem of the Orient Earth," and few have disputed the fitness of the term.

The natives of Macao export tea, firecrackers, tobacco and Chinese foodstuffs. The commercial activity of the place, however, so far as the Portuguese is concerned, is a thing of the past.

During the war between Kwangtung and Kwangsi Provinces in 1916 piracy became rife in the waters about Macao. In January a community of pirates on the island of Wongkum was attacked by Chinese troops, the pirates suffering the loss of 14 men while the soldiers lost 4. Further raids were without success, and the subsequent desertion of all troops to the defense of Canton gave the pirates a free hand. An outer station of the Lappa customs (just off Macao) had to be closed, as the lives of the Chinese staff and the one European stationed there had been threatened by pirates. In June a British ship running between Macao and Kongmoon was chased by pirates in commandeered steam launches, but managed to return to Kongmoon and there procured the services of three small Chinese gunboats to escort her. In July and August the pirates began kidnapping wealthy people and holding them as hostages, and in October they boldly attacked junks anchored within a few yards of the Macao Bund In 1917 the situation was under the control of the authorities.

COMMERCE AND INDUSTRY.—Lappa, an island directly opposite the inner harbor of Macao, distant about a mile, is the customs station for Macao, for a small part of Heungshan Island, and for a few unimportant islands inhabited by fisherfolk in the neighborhood. The figures of imports and exports via the Lappa Customs are not a reliable index to the trade of Macao or of any large part of the Canton Delta, as there are many other custom houses in the district—Kowloon, Canton and Kongmoon being the important customs stations.

IMPORTS.—The imports of foreign goods into Lappa in 1917 amounted to Tls. 10,695,644. In 1910 the imports totalled Tls. 13,954,149, since when the decline has been steady. Imports of Chinese produce in the same period totalled Tls 419,461. Much of the large figure of "foreign" imports is accounted for by native goods from nearby points which were shipped into the foreign port of Hongkong to acquire the status of "foreign goods" and the benefits of Customs treatment on that status, and then returned to Lappa for distribution inland free from the taxation of the likin stations.

EXPORTS.—Exports of native goods to Macao, Hongkong and other foreign ports totalled Tls 5,168,397 in 1917. Principal exports were of pigs, poultry, bamboo and bamboo articles, bricks and tiles (eight millions), coconuts (1,248,104), fresh eggs (seven and one-half millions), palm-leaf fans (23,978,634), fireworks (92 tons), hides (1,552), straw mats for packing purposes (seventeen and one-half millions), cassia-leaf oil (95 tons), peanut oil (72 tons), paper (434 tons), wild silk (88 tons), stone, including limestone for the cement factory at Macao (15,825 tons), black tea (976 tons), timber for native uses, tobacco, and a long list of Chinese goods.

TRAFFIC.—In 1917 entrances of steamers totalled 209 of 29,567 tons and of sailing vessels 6,728 of 417,862 tons. Of the steamers 155 of 23,250 tons were British and 54 of 6,317 tons were Chinese; all the sailing vessels were Chinese.

There are three daily steamers between Macao and Hongkong, the crossing being made in about 3 hours. There is also daily service with Canton, 88 miles distant.

PORT FACILITIES.—There are nine wharves, two of which belong to the Hongkong, Canton & Macao Steamship Company, one to the China Merchants Steam Navigation Company, and the remainder to various native steamship lines. They are in length respectively 80, 70, 50 and 40 feet, and have a depth alongside at low water, ordinary springs, of 7 feet. Vessels can also load and discharge by cargo boats. There is anchorage six miles from the Macao lighthouse of 3½ to 4 fathoms, at low water ordinary springs. The depth on the Bar at high water is: ordinary springs, 12 feet; ordinary neaps, 10 feet. The depth in Port at ordinary springs is: high water, 18 feet; low water, 12 feet.

PORT IMPROVEMENTS.—In 1913 a newly-dredged channel, 20,000 feet long by 150 feet by 11 feet deep, was opened to traffic. Extensive work is contemplated to enable deep sea steamers to enter the port and dock at wharves which, it is hoped, will be connected by rail with the interior and Canton.

MERCHANTS.—Herbert Dent & Co.; J. V. Fernandes & Co.; A. D. de Mello.

Hoihow

Hoihow, on the Island of Hainan, which lies off the coast of Kwantung Province, twelve miles from the Luichow Peninsula, is the seaport of the city of Kiungchow, three and a half miles distant. The position of Hoihow, though geographically favorable, is topographically unsuited for the development of any extensive commercial transactions, vessels being compelled to anchor some two miles from the entrance of the creek upon which the town is situated. The tides are irregular and the anchorage is apt to be visited by very severe typhoons, being entirely unprotected from the north. The approaches to the shore are extremely shallow, so that loading and unloading can be carried on only at certain states of the tide. Kiungchow was opened to foreign trade in 1876, and foreign traders put in their appearance about 18 years later. Since then, as the port has been served by an increasing number of steamships, its trade has increased in importance.

The population of Kiungchow is about 50,000, while that of Hoihow is about 30,000. No foreign settlement has yet been formed at the port, with the exception of a few public buildings. The residences occupied by the few foreigners there are native houses converted into European habitations by alterations and improvements. The foreign residents number about 90.

Much of the island is unexplored, but the small amount of investigation which has been made by foreigners would lead to the belief that Hainan is rich in various minerals, tin, silver, gold, copper and lead having been discovered. In addition, the island is heavily forested. The livestock industry is an important one in Hainan. Beef animals, pigs and fowls are shipped to Hongkong in great quantities. Sugar also figures prominently in the exports. Agricultural products of all kinds are also exported, the important articles being silk, cocoanuts, eggs, peanuts, sweet potatoes, pineapples, tobacco, betelnuts, sesamum seed and fresh fruits.

Returned emigrants from the Malay States have recently begun the cultivation of rubber in Hainan. Since 1910 about 50,000 rubber trees have been planted. Three years ago one native company tapped 2,000 trees, while this year 3,000 trees are being utilized by the same company, with a production of 11 catties a day. Twenty-three piculs were exported to Singapore in 1917, in sheets, and was reported to be of first quality. Last year a Cantonese merchant in Singapore obtained from the Ministry of Agriculture and Commerce a grant of land on which to grow 5,000,000 rubber trees, guaranteeing that when these are in a flourishing condition he will pay a royalty of $5,000,000 Mexican to the Government. Other Chinese merchants from the Straits Settlements are looking for suitable areas for rubber cultivation.

COMMERCE AND INDUSTRY.—The imports of foreign goods in 1917 amounted to Tls. 3,357,238 and of native goods Tls. 110,185. Exports amounted to Tls. 2,449,671.

The foreign goods imported included cotton goods of various kinds, woollens, flour, kerosene oil, matches, etc.

TRANSPORTATION FACILITIES.—660 vessels of 460,801 tons were entered and cleared in 1917. Most of the trade was with Hongkong. 3,364 Chinese junks were cleared in the same period, for ports in the Canton delta and other nearby places.

Pakhoi

Pakhoi, in Kwantung Province, is situated in long. 109 deg. 7 min. E., lat. 21 deg. 29 min. N., on a small peninsula extending into the Gulf of Tongking. It was opened to trade in 1877, by the terms of the Chefoo Convention. Its population is 20,000: Limchow, the capital of the hsien, is located about 20 miles to the north and connected with it by both water and road, and has a population of 60,000. The population of the hsien is given as 400,000.

Pakhoi is situated on the southern corner of the harbor, which is described as the most easily entered in China, with its conspicuous and unmistakable landmarks, visible about 20 miles In the early years of its status as a treaty port Pakhoi served the territory between the seaboard and the West River, which runs, roughly speaking, parallel with the coast in the region. The opening of the West River to foreign trade, the establishment of treaty ports on the river, and the foundation of the French free port of Kwangchowwan in French leased territory, have all dealt a staggering blow to local trade.

Pakhoi is one of the great salt centres of South China. About 400,000 piculs of salt pass annually through the stations of the Salt Gabelle at Pakhoi and Chinchow, for Kwangsi Province alone. Salt is probably cheaper in Pakhoi than at any other place in China, selling for 70 cents per picul before the initial duty of $1.00 is levied. Before the salt reaches some of the more distant spots in Kwangsi the selling price has reached $10 a picul, what with the payment of various duties on the road and the high cost of transportation. It is estimated that if there were a railway in operation between Chinchow and Kwangsi at least 600,000 piculs of salt alone would seek transportation from Chinchow each year.

The maximum temperature recorded in 1917 was 93 deg. F; minimum, 37 deg. F., the latter unusually low. The highest reading of the barometer was 30.680 inches on January 8th and the lowest 29.451 inches on July 26th.

COMMERCE AND INDUSTRY.—Imports of foreign goods in 1917 totalled Tls. 1,606,452; of native goods Tls. 3,514. Exports were Tls. 1,111,260. Some of the principal exports are listed below:

	1916	1917
Pigs, living	15,846 piculs	8,275 piculs
Aniseed	150	1,345
Cuttle-fish	4,639	4,888
Firecrackers	2,253	703
Fish, dried and salt	6,395	7,113
Peanut cake	12,733	4,078
Hides	3,796	2,965
Liquid indigo	40,061	45,504
Peanut oil	297	1,177
Brown sugar	3,310	2,613

Hongkong is the principal market for the products of the Pakhoi region. Exports are manganese, fireworks, liquid indigo, leather, medicines, sugar, peanut cake and pigs. Piece goods form the principal import, nearly equalling all other imports in value.

In favorable seasons sugar is produced and exported. The cane-crushing apparatus in use locally consists of two upright stone rollers in a wooden frame turned by a buffalo or other animal. Indigo is another product of the region; exports of it in 1917 amounted to 45,504 piculs, the large increase over former years being due to the shortage of foreign dyes. Pigs are a by-product of agriculture; when crops are good and produce cheap large numbers are raised and exported to Hongkong.

Of the imports piece goods represent 38 per cent. Other imports are cotton yarn for weaving by hand, kerosene oil, and cigarettes, the importation of which in 1917 represents an increase of 80 per cent. over the preceding year.

PORT FACILITIES.—The Pakhoi anchorage is situated northward of Kwantan Point off Tikok and about 2 miles southwest of the city, affording anchorage for vessels of moderate draught; it is sheltered from the sea during the northeast monsoon period and is somewhat protected by sandbanks on its north side, but it is entirely open to the west and southwest. The channel approaching the harbor is about a mile wide, with depths of 3 to 3¼ fathoms abreast Kwantan Point reduced to about half that width abreast Tikok, off which there is anchorage in 4 or 5 fathoms; above the fishing stakes, which here stretch across the channel, there is anchorage in 3½ to 4 fathoms. The approach to Pakhoi is encumbered with fishing stakes.

Kwantan Point in the approach forms the western extreme of a low peninsula, being a range of hills nearly 1½ miles in length. The western side of the peninsula is composed of cliffs up to 70 feet in height, whilst farther northward there are sand cliffs from 50 to 60 feet high, fronted by a bank with less than 6 feet of water over it to nearly three-fourths of a mile.

From January to April heavy northerly gales blow frequently and rise suddenly, lasting sometimes three days. Typhoons occur occasionally from June to October. The bay affords little protection against the western winds to which it is very much exposed. Small craft, however, during a storm can find shelter easily in a long and narrow but shallow sandy bottom estuary.

The rainy season at Pakhoi is from January to June, but there is no uninterrupted or heavy rain. It is high water, fall and change, at 5 hours 10 minutes spring rise 16 feet, neap 11 feet, approximately; the stream sets through the anchorage at the rate of two knots of springs, and half a knot neaps.

There are no wharves in Pakhoi. The Standard Oil Company and the Asiatic Petroleum Company have godowns located on the shore. The Customs House is the only large structure on the water front.

TRANSPORTATION FACILITIES.—Mail steamers running between Hongkong and Haiphong call here twice a month usually, but now the service is irregular. In 1917 101 steamers of 61,190 tons were entered at the port. Of these 76½ per cent. were British, 9¾ per cent. French, 7 per cent. Portuguese, 4 per cent. Dutch, 2⅓ per cent. Japanese, and ⅔ per cent. Chinese. Coasting vessels call at Haiphong, Hoihow and Hongkong on voyages to and from Pakhoi. There is a large junk trade with Haiphong, Tunghing, Chinchow, Onpo, Hoihan and Kwangchowwan, and five junk lines whose fleets ply between Chinchow and Pakhoi. Typical freight charges in this service are given below:

Soap, per box	Mex. $0.06
Rice, per sack	.30
Steel bars, per 100 catties	12
Kerosene, per 10-gal. case	.06

A trail for overland transportating leads to Pokbok, in Kwangsi, by way of Limchow.

Yamchow

A survey has been undertaken for a railway which will extend from Yamchow—an important centre 80 miles northwest of Pakhoi, whose seaport, Lungmoon, is of sufficient depth to accommodate steamers of light draft—to Chuchow, in Hunan Province. Yamchow is 30 miles distant from Lungmoon by water and 24 miles overland. Junks of 1,500 piculs capacity can discharge and load in the stream. A French syndicate has obtained the concession of two lines of railway to run from Yunnanfu, one of which will have its terminus at Yamchow.

In the year 1906 the Limchow Railway Company (Chinese) was organized for the purpose of building lines from Limchow to Pakhoi, Lingshan, Pokpak and Yamchow. Nothing came of this, partly due to a cessation of enthusiasm and partly to the objection of the French Government, who claimed that they had a concession which gave them a prior right of construction.

MINING.—Coal is being mined at Nimtzeping, 15 miles from Yamchow, by a company which started operating in July, 1917. The coal is laid down at Pakhoi at $12 Mex. a ton, most of this representing the cost of transportation. A manganese deposit was worked at Nata in 1916, operations ceasing after 45,688 piculs of ore had been recovered, and this ore was exported to Japan in February, 1917. An antimony mine near Tunghing, on the Tonkin border, was worked in 1906 and 1907, but the yield was not sufficient to make it pay. Iron is found on the surface of the ground near Yamchow, and gold is washed in small quantities from the sand of the Limchow River.

HONGKONG

Hongkong, the name given to the British Crown colony, is an island lying off the coast of Kwangtung province near the mouth of the Canton River between lat. 22 deg. 9 min. and 22 deg. 17 min. N., long. 114 deg. 5 min. and 114 deg. 18 min. E. The colony was ceded by China to Great Britain in January, 1841, the cession being confirmed by the Treaty of Nanking of August, 1842. Hongkong is the great centre for British commerce with China and Japan and a military and naval station of first-class importance. The administration is in the hands of a Governor, aided by an Executive Council composed of the General Officer Commanding the Troops, the Colonial Secretary, the Attorney-General, the Treasurer, the Principal Civil Medical Officer, the Director of Public Works, and two unofficial members. There is also a Legislative Council presided over by the Governor and composed of the General Officer Commanding the Troops, the Colonial Secretary, the Attorney-General, the Treasurer, the Director of Public Works, the Captain-Superintendent of Police, the Registrar General, and six unofficial members—of whom four are nominated by the Crown (two of them Chinese), one nominated by the Chamber of Commerce, and one by the Justices of the Peace.

The island is an irregular and broken ridge, stretching nearly east and west about 11 miles, its breadth from 2 to 5 miles, and its area rather more than 20 square miles; separated from the mainland by a strait about half a mile in width. In 1861 a peninsula on the mainland opposite, known as Kowloon, was ceded to Great Britain, and in 1898 a further cession of Chinese territory on the mainland and certain waters nearby was made on a lease for 99 years. The area of the new territory is 376 square miles

The European and American population of Hongkong before the war was about 8,000, but this number was materially reduced by departures for war service. In the past 4 years the Chinese population has increased enormously, due to the influx of refugees from Kwangtung Province who sought to escape the internal warfare and disorder from which the Province has been suffering recently, and is now estimated at more than half a million.

The Island of Hongkong is mountainous; on all sides the mountain slopes extend to the water's edge, and most of the very small area of inhabited level ground has been made by reclamation. The greater part of the population reside on the lower levels of "The Peak," where circling roads densely built up with houses are reached by winding paths and steps up and down which the residents are carried in sedan chairs. Higher levels may be reached by sedan chair or by a rope tramway which, however, does not extend to the water's edge or even to the business section, but stops at a point above the business section to which passengers are usually carried in chairs. The rope tramway leads to Victoria Gap, with four intermediate stations, and the upper levels reached by its means comprise a residence district over which magnificent homes are scattered. Viewed from the Peak, there is no lovelier sight than the great harbor, with an area of ten square miles, which is formed between the island and the mainland and reached from the open sea by passes at either end. From a favorable point of view on the Peak the whole of the harbor and surrounding waters can be seen at a glance, and viewed from the harbor the entire city of Victoria lying as it does on the mountainside appears as a picture spread out for inspection. The mountains of Hongkong are covered with dense tropical verdure which makes an effective background for the splendid buildings of stone and cement in pleasing white, grey or cream tints, and roads and paths chiselled from the solid rock wind through the trees and shrubbery which provide pleasant shade for the passerby. The three roads nearest the water's edge, which comprise the business section, rely for shade upon verandahs of uniform construction reaching over the sidewalk in front of all buildings. Shade is a necessity in the part of China in which Hongkong lies. In Canton and other nearby Chinese cities it is provided by the narrow width of the streets, the buildings on either side preventing the sun from reaching the roadway except for a short time daily, and this even is checked by reed or bamboo shades which are lain over bamboos which stretch from housetop to housetop across the few feet of intervening space.

Hongkong has very nearly all the modern adjuncts of city life. A tramway skirts the mountain at its very base for a distance of 9¼ miles, the city has a complete telephone system, there is a comprehensive scheme of waterworks, and electric light plants and two gasworks serve residences and buildings on all the Peak levels and in Kowloon. Hongkong and Kowloon are connected by a fleet of steam ferries which give fast and frequent service. The mountains on the Kowloon peninsula do not extend to the water, but between them and the sea is a comparatively level stretch a mile or so wide and several miles in depth. Afforestation has begun on the once barren mountains in the Kowloon territory, and the slopes are beginning to take on the appearance of the well wooded mountains of Hongkong Island.

Hongkong formerly suffered a most unenviable notoriety for unhealthfulness—so bad that in its early years the Colony was once near the point of being abandoned for the malaria and other pestilences which had ravaged its population. The heavy sub-tropical rains were constantly breaking open and carrying down the soil of the mountains, of which R. M. Martin in "Martin's China," published in 1847, has to say:—

> "The structure may be briefly described as consisting of decomposed, coarse granite, intermixed with a strata of red disintegrating sandstone, crumbling into a stiff ferruginous-looking clay. Here and there huge boulder stones, which gun-powder will not blast, may be seen embedded in a stiff, pudding earth, or they are strewed over the tops and sides of the mountains. Gneiss and felspar are found in fragments That the granite is rotten and passing, like dead animal and vegetable substances, into a putrescent state, is evidenced from the crumbling of the apparently solid rock beneath the touch, and from the noxious vapour, carbonic acid gas, or nitrogen which it yields when the sun strikes fervidly on it after rain. On examination of the sites of houses in Victoria, whose foundations were being excavated in the sides of the hills, the strata appeared like a richly prepared compost, emitting a fetid odour of the most sickening nature, and which at night must prove a deadly poison. This strata quickly absorbs any quantity of rain, which it returns to the surface in the nature of a pestiferous mineral gas. The position of the town of Victoria, which may be likened to the bottom of a crater with a lake, prevents the dissipation of this gas, while the geological formation favours the retention of a morbific poison on the surface, to be occasionally called into deadly activity."

The prevailing disease of the time was fever, and next in point of seriousness was the dysentery. Mr. Martin relates that in 1843 there were 7,893 admissions to the hospital from European and native troops numbering 1,526, or an average of above five admissions for each man in the service, and that of this number 440 died. He also notes that the deaths in the naval force at

Hongkong and Whampao were 4½ per cent. in the six months ending October, 1843, and in the same period the deaths among the troops averaged 24 per cent. Hongkong had as well an evil reputation for its immorality, lawlessness and insecurity of life generally, having gained particular notoriety in 1857 by an attempted wholesale poisoning of the foreign residents by the placing of a great deal of arsenic—about 60 grains to the pound—in the local bread supply, by persons unknown.

All this belongs to the buried past. The causes of the pestilences of early days have been removed by scientific drainage and afforestation, and Hongkong is one of the most orderly cities on earth. Its death rate in 1910 was about 21 per 1,000, and this included the huge Chinese population whose disregard of the commonest hygiene is almost proverbial. Very likely if the statistics regarding the foreign population were separated they would compare favorably with the ordinary health resort, and there is no doubt that with the measures of sanitation vigorously enforced among the Chinese population the rate of mortality among the Chinese is astonishingly low when compared with that of the usual Chinese city. In 1913 the general death rate per 1,000 of the non-Chinese community was 13.84, and the average among the Chinese population was 19.00 in the same period.

Briefly, Hongkong is now one of the pleasantest and safest places of residence, and prosperous and expanding business communities, in all China. Concerning its commercial and industrial aspects, more will be said in the articles which follow.

The Trade and Commerce of Hongkong

(BY PROFESSOR MIDDLETON SMITH, M.SC.)

A Chinese gentleman, not a citizen of Hongkong, once coined a phrase which eloquently describes the Colony. It explains and justifies the title given to Hongkong by an American author, who called it "the brightest jewel in the British Colonial Crown." For the sage Chinese onlooker remarked that "China lost a barren rock when she ceded Hongkong to Great Britain in 1841, but in return she has since received a mountain of gold." The allegory contains a truth which is at once a tribute to the traders of both nations, and a reminder that the Chinese have benefited more than any other people by the amazing development of this emporium of the Far East.

The British were among the pioneers who opened up trade between Europe and China by the sea route. Canton, the largest city of the most ancient Kingdom was, until 1841, the objective of British traders. The story of the early difficulties and the continuous endeavour of the British to "carry on" with their efforts to extend the realm of international commerce, is long and perhaps a little tedious. But at last an arrangement was made so that the lives and the property of British traders might receive the only protection which would ensure their safety; and seventy-seven years ago the Union Jack was unfurled on the little "barren pirate-infested rock" at the mouth of the Canton River. The rock is now the foundation for a thriving centre of commerce. And it now overlooks the largest port on the Pacific Ocean.

There were, on that historic day in 1841, only a few Chinese fishermen—mostly pirates—on the island; there are now about half-a-million Chinese who find justice and opportunities for earning a livelihood under the shadow of the flag upon which the sun never sets. And most of those Chinese are at work in connection with the trade and industry of the Colony. Many of them have relatives in other parts of China, mostly in the adjoining province of Kwangtung, to whom they remit some of their earnings. Nearly all of them work with the idea of returning, once a year, or as often as is possible, to the home of their ancestors.

A Great Shipping Port

Three things have been chiefly responsible for the remarkable transformation of a little barren island into one of the largest ports of the world. They are (1) British enterprise, justice and security (2) Chinese industry (3) geographical situation. All of the largest industrial undertakings have been initiated and carried out by British citizens who have so successfully planned them. All of the muscular energy necessary for their successful accomplishment has been supplied by Chinese coolies. And it was the genius of an island race which made them select an island with a splendid harbor as their base. For what the river Thames is to London, so is the spacious and deep water-way between Hongkong island and the mainland to the little British Colony in South China. And it is situated so that it is the gateway to the Far East.

It must, therefore, be understood that shipping is the very life-blood of the Colony. It might almost be said that until quite recent times, all labour in Hongkong depended for its employment upon the Argosies which drop their anchors in the beautiful harbor. But the industrial era has dawned in the Colony. It



A BIRD'S-EYE VIEW OF THE CHANNEL BETWEEN HONGKONG AND KOWLOON, SHOWING THE ADMIRALTY DOCK IN THE FOREGROUND

is now commencing a new epoch as a manufacturing centre, and it is inevitable that its activities will greatly extend in that direction. Large ocean-going steamers are being built in the local Dockyards and the largest sugar refinery (under one roof) in the world is situated in Hongkong. Cement works, a tobacco factory and numerous other manufacturing establishments are merely an earnest of what will happen in the future. In the days of war it was difficult, if not actually impossible, to import machinery for new industrial projects; but now that the war is over there will be an extraordinary extension of Hongkong's local industries.

The Argosies

Situated at the mouth of the river which connects it by water with Canton, the most populous city in China, Hongkong has one of the finest harbors in the world. The roadstead covers a total area of about ten square miles. With a narrow entrance at each end, it is practically surrounded by hills and is therefore well sheltered. It is Europe's Gateway into China; and all of the ships which come out from the West, whether bound for Shanghai or the ports of Japan, pass through the harbor of Hongkong. A number of lines which run across the Pacific to North or to South America, have Hongkong as their terminus; ships from Australia and the Dutch East Indies, from Borneo, Burmah and India, run, in normal times, to the great distributing centre in South China. River boats ply frequently between the Colony and Canton, Macao and the ports of the West River. The trade and commerce of Hongkong is, like that of ancient Venice, dependent upon the waterways. Yet, here again, the future casts its shadows, for a few years ago a railway was built which connects Hongkong to Canton with links of steel. The terminus of the line in the Colony is at Kowloon, and one day it will be the terminus of trains which will connect London (or if the channel tunnel is not built, Calais) and the rest of Europe with Asia and the Colony. Some of the produce of the inland provinces will come down by water, but in the days when the last link of the long chain of rails is forged, vast quantities of material will pass along the railway. The terminus is actually on the sea; it is now almost surrounded by modern and spacious godowns alongside which the deep-sea steamers are berthed so that they may discharge and receive cargo. But if the real importance of the railway lies in the future, the value of the harbor is a very tangible thing of the present and the past.

It is very difficult to obtain shipping returns in time of war, and it is even more difficult to compare such details with pre-war figures, because the world-wide conflict has shattered all of our ideas of value. Some of the trade of Hongkong, in common with that of the rest of the British Empire, has suffered because of the infamous attempt of the Germans to wreck our civilization. You cannot expect the trade of a shopkeeper to increase when a gang of burglars is openly plotting and planning to wreck the premises. For four years the trade of the whole world has been upset and the Far East has not escaped the effects of the greatest social typhoon in history. It is therefore almost useless to quote figures of to-day, even if they were available. That statement applies particularly to shipping, for all of the vessels which fly the red ensign are still "controlled" by the Imperial government. The patriotic men of commerce in Hongkong accept the temporary loss of some of their shipping in the self-denying spirit that has animated every son of the Empire since the war commenced. The Anglo-Saxon ideal has been, and is, freedom; it is for that ideal that the Empire has bled and suffered during the past four years. And in order to preserve that ideal the business men of Hongkong have given up that which they prized most, their own individual freedom and the freedom of their trade. But now that the days of war are ended they expect to regain that which they have temporarily lost.

The official figures for shipping, however, show a continuous increase. In 1916 the vessels entering and clearing the port numbered 16,851 exclusive of native craft. Their total registered tonnage was 18,892,720 tons. There were 7,516 ocean-going vessels, and of these the total tonnage was 13,728,092 tons. The British ocean-going steamers easily led the way, being just about equal in number and tonnage to those of all of the other nations combined. It is of interest to note that Japan owned rather more than twenty-five per cent. of the total shipping of the port. The Chinese occupied the third place with about ten per cent., and the other nationals represented were the Norwegians, Dutch, French, Portuguese and Americans.

In the peaceful days before August, 1914, the figures were in a different proportion. State-subsidised steamers flying the German and Austrian flags came into the British port, and in no place in the world did the Germans take greater advantage of the British ideas of personal freedom than in Hongkong. The semi-political, thoroughly unprincipled methods of German "peaceful penetration" in our Empire have now been exposed. Suffice it is to record the fact that the Hongkong Chamber of Commerce has shown a most determined attitude on this subject, and has completely educated and carried public opinion in the Colony with it. For at a public mass meeting held in the City Hall early in 1917 it was decided to urge the Imperial government to exclude the Germans from the Colony for a period of ten years after the war.

If we consider both ocean-going and river-borne commerce, we find that for 1916 the cargo imported totalled 4,737,215 tons, while that which was exported totalled 2,606,244 tons. In addition, some 3,579,637 tons were brought into the Colony on transit. According to the official figures the total value of the imports and exports for 1916 was, in Haikwan Taels, 272,833,274. About one and a half million passengers arrived in the Colony by water and a slightly fewer number left by the same means. There is a ceaseless daily flow of passengers by water and by rail between Hongkong and Canton.

Imports and Exports

The reader may well ask as to what do all of these huge figures of imports and exports refer? What cargo is it that Hongkong takes out of the ships and with what are they laden as they go away from the Colony? It is not easy to answer the questions, for it is only quite recently that the Colony has compiled any trade returns. There are, of course, the excellent statistics on trade furnished by the Chinese Maritime Customs, and there are the "Captains of industry" in Hongkong who have a very shrewd idea of the goods which form the basis of the trade. But, when all is said and done, we have to come back to the great fact that we are living in abnormal times, and that the trade of yesterday is not, of necessity, the trade of to-day, and it will not be, perhaps, the trade of the years following the declaration of peace. The whole world is in a state of flux. The cotton mills of Lancashire; the shipyards of America; the steel-works of Yorkshire; the silk industry of France—all of these are matters which must affect the trade of Hongkong, and to talk of what happened before August, 1914, seems almost as futile as giving figures about the trade of the Colony in the days before steamships and the construction of the Suez Canal entirely changed everything. Yet a few general remarks may not be out of place, even though they must of necessity be very general and may appear rather disconnected.

The trade in piece-goods, mostly from the mills of Lancashire and Yorkshire, but in recent times also from India, is the great feature of local commerce. There are now cotton mills in Shanghai, but, important as are these products of British and Japanese enterprise to the Yangtsze port, they do not greatly affect the trade in piece-goods in Hongkong. The raw cotton from Egypt, or the Southern states of the great Republic in North America, is carried in British ships across the ocean until it reaches the well-equipped mills of Britain, and there experienced craftsmen and ingenious modern machinery make it up into the "piecegoods" which finally reach the capacious godowns of Hongkong. What is its final destination? The local European importer practically loses interest in it when it leaves the godown; the Chinese trader then handles it. And up the waterways of South China and even over the mountain-tracks on the backs of coolies, "the piecegoods" are carried from Hongkong into the remote towns and villages of inland China. Canton, the city of a million inhabitants, all, more or less, clothed with "piecegoods," absorbs some of the material and even Hongkong itself must consume no negligible quantity. But thousands of miles beyond these points of contact with the West, the wonderful native distributors of the commerce of Hongkong carry on their trading proclivities; and it is by no means impossible that Chinese who have not yet heard of the great war are arrayed in cotton goods made by "diluted"

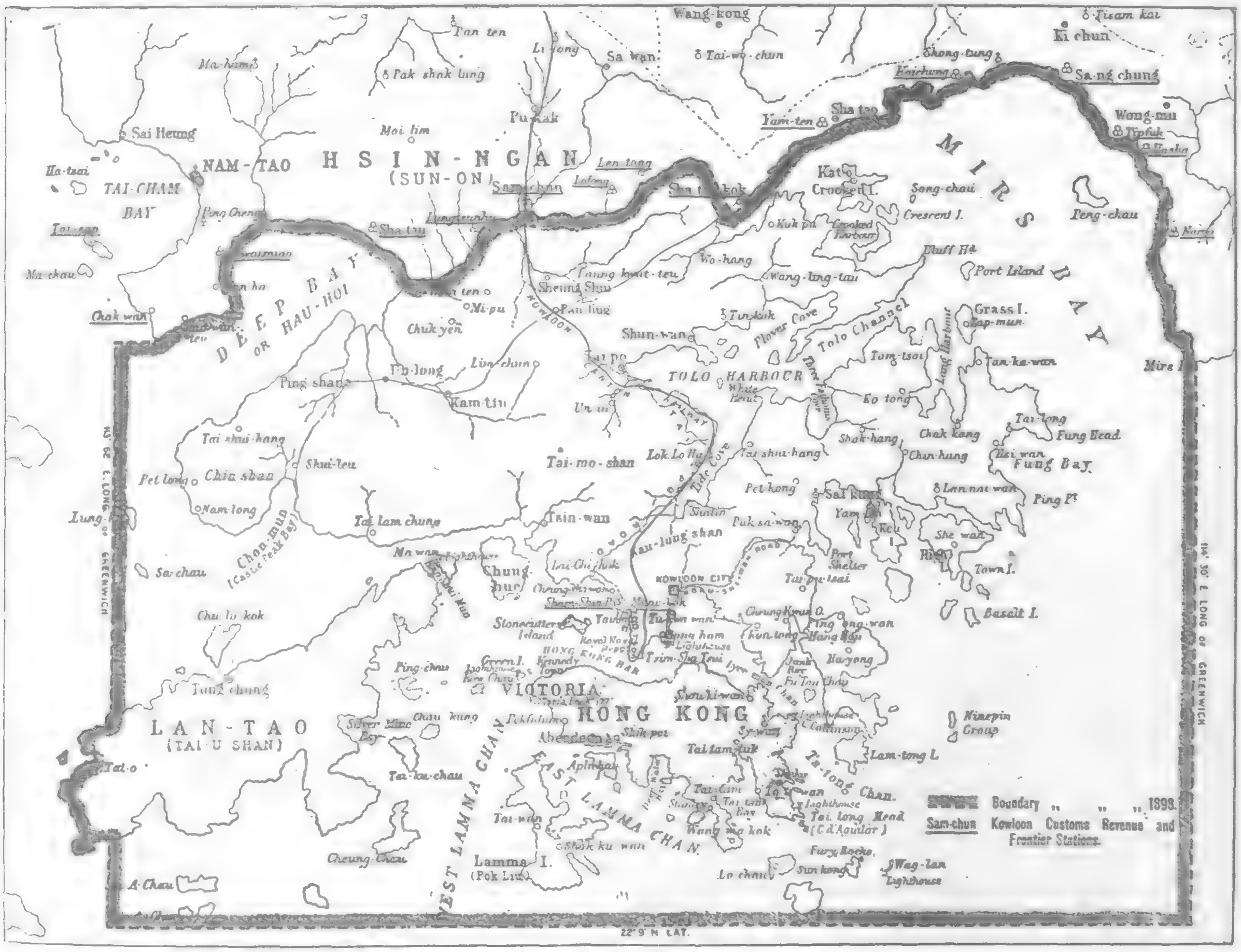
female labour in Lancashire, and carried out in ships which have successfully run the gauntlet of German submarines.

Mention must be made of the imports of metals and machinery, for, in the opinion of the writer, that will be of supreme importance now that the war is ended. Except for the work done in the shipyards of Hongkong, and small local efforts in Canton, all of the modern machinery used in South China is imported. Practically all of the raw materials used, the pig iron and steel-plates and bars, are imported into the Colony. Every little town and village in South China is anxious to obtain, if it has not already installed electric light; and the demand for electrical apparatus is one that will extend rapidly when freights resume a normal figure. Hongkong itself will absorb no insignificant quantity of modern machinery, for Hongkong is only on the threshold of its great future as a manufacturing centre. The machinery in the three large shipyards (Hongkong and Whampoa Dock, Taikoo and the Royal Naval Yards) are as up-to-date as anything in Great Britain, and the output in shipbuilding is merely an indication of what the future holds. For remember that one of the first industries to be established on the Thames was that of shipbuilding and ship-repairing; and from that has grown a thousand other branches of industry and commerce, until London is not only the most populous city in existence, but what is not so generally realized, a big centre of manufacturing work as well as the clearing house of the world of commerce.

It is said that in every little town or village of inland China you will find kerosine and cigarettes The energy of the oil and tobacco companies has been remarkable, and they have reaped the reward of commercial enterprise. They have sent Europeans up into the back country, introducing a new system of dealing direct with the local consumer. They have undoubtedly attracted attention to the great importance of a knowledge of the Chinese language. Recently the Hongkong Chamber of Commerce has instituted a school so that Europeans may learn to speak to the Chinese in their native dialect.

Among the imports for the four months ending in December, 1917 (not including cargo or transhipment) some uexpected figures are to be found. Thus over two million cubic feet of teak-wood arrived; nearly four and a half million dollars worth of Chinese medicines (ginseng, deerhorn, etc.) came into the Colony; also more than three million piculs of rice, eight million tins of condensed milk, 164,781 piculs of peanuts, more than a quarter of a million dollars worth of paints, between seven and eight million dollars worth of treasure (gold, silver and bank notes) over a million gross of matches, half a million dollars worth of soap; tin, antimony, quicksilver and wolframite (mostly to be re-exported) and toys and games to the value of $132,403, not all of the latter for the local children.

As for the exports, they are of a most miscellaneous nature. There were, for the four months mentioned above, over a million square feet of glass sent out of the Colony. Large quantities of chemicals, drugs and medicines, a great deal of rice and flours, nearly two and a half million piculs of sugar, fourteen million eggs, while some locally manufactured machinery, including propelling machinery (steam) valued at $640,963 were exported. And among the articles which find their way from Hongkong into China, in fairly large quantities, are dyes, foodstuffs, metals, oils, boots, wearing apparel, gunny bags, bedsteads, brushes, China ware, cotton, lamps, leather, matches, mirrors, soap, stationery, umbrellas and the cotton and woollen goods. And behind all those plain words is a network of banks, offices, cables, correspondence, agents, advertising methods and all of the intricacies of



HONGKONG AND BRITISH LEASED TERRITORY OF KOWLOON

modern commerce. It is as if Hongkong is the centre of the brain for the trade of South China and the nerves reach out from it to all parts of the world and connect, as it were, the inhabitant of far-away Yunnan with the cotton-operative of Lancashire or the blast-furnace worker of the Midlands.

The possibilities for the growth of Hongkong are to-day infinitely better than those for London appeared to be when that city had a population numbered in hundreds of thousands, instead of in millions. We will not strain the comparison, but merely outline the situation to-day as regards Hongkong.

Factors of Success

Experience has proved beyond question, that the combination of British administrative ability and a knowledge of modern commercial methods when combined with the remarkable industry and craftsmanship of the Chinese worker, supplies all of the ingredients, but one, necessary for success in modern industry The other essential is security of life and property, which means also a just government. Hongkong, in this latter respect, presents a striking contrast to the rest of South China. Battle, murder, sudden death, piracy, robbery and all of the evils of despotic, inconsequent and divided government, afflicts Canton and the other populous districts of South China. Otherwise they might conceivably, under ideal conditions, become modern manufacturing centres in the near future. But it is not at all probable that either the British or the Chinese will gamble with their capital, even if they would risk their energy, in manufacturing plants which might be taxed extortionately. It is inconceivable that, until the Government of South China is utterly changed, there will be any attempt at industry on a modern scale in any place outside of British territory. It would be, even with an ideal and strong provincial government in Canton, of very little advantage to erect, let us say, a large works for manufacturing electrical supplies in that City while Hongkong offers all the attractions of a port with a deep sea harbor and all of the mechanism of modern commerce, such as European banks and organised trade with all parts of the world.

The one thing that is wanted to ensure a success for Hongkong beyond the limits of our imagination is a generous supply of raw materials. It is essential that steps should be taken, in the interest of China, Hongkong and the rest of the world, that the raw material, the mineral wealth, of the provinces of Kwangtung, Kwangsi and Yunnan should be developed. It is true that a tiny stream of rare metals (tin, wolframite, etc.) trickles down, but the sluice gates must be opened. It is simply an insult to the world in general and the Chinese nation in particular that, owing to the rapacity of the various "Generals" and officials, it is practically impossible to liberate the untold mineral wealth of South China. The writer has tested various samples of coal from Kwangtung. It could be sold at a profit, if the coal-mines were worked properly, at $1.50 a ton in Canton Instead of which coal from Japan is imported and sold, just now, at some such figure as $35, a ton; it only remains to be said that Hongkong suffers from such anarchy.

There is coal and there is iron in abundance in Kwangtung, and some day the blast furnaces will roar and the pig iron of South China will be perhaps the cheapest in the world. The basis of modern manufacturing industry is cheap coal, cheap iron and cheap labour. With proper organization in South China all three will be available in Hongkong. There will be also British enterprise, justice, organising ability and capital.

The Past and the Future

It is difficult to contemplate the progress of this little Colony without feelings of emotion and pride in the national ideals upon which its success has been founded as firmly as the island itself is founded on its granite base. The rock falls sheer beneath the sea; but it defies the lashing of the most furious waves, the onslaught of the boldest inhabitants of the deep, and firmly carries this wonderful lighthouse of the arts of peace. You see the flourishing city of Victoria, a Western city dumped, as it were, with all of its modern paraphernalia of telephones, electric trams and stock exchange, on to the sea-level at the foot of a towering hill of granite. You do not see the work of the past—the bold reclamation scheme of that wonderful commercial visionary, Sir Paul Chater, C.M.G., who might well be called "the Father of the Colony." You see, opposite the impressive headquarters of the greatest bank in the East, the statue erected during his life time by a grateful community to the Colony's most remarkable financial genius, Sir Thomas Jackson. But probably you have not heard of those days when the merchants of the Colony looked to that great Irishman as the children of Israel looked to Moses in the wilderness, to save them from disaster. You read the records of the shipping, but you may not know that it has all grown up out of the pioneer work of some of those tenacious merchants of the past who continued their trade in spite of pirates, tropical diseases and all sorts of impediments.. You come into the comfortable lounges of the local hostels, sipping iced drinks beneath electric



THE FAMOUS ROADSTEAD (WEST), HONGKONG

fans, reading cables which left London a few hours previously, and you forget those days of the tedious journey by sailing ship round the Cape, the times when malaria swept through the Colony and a third of a regiment of British soldiers died of it in a year You cannot even picture to yourself, if you try to do so, the isolated life of the pioneers of those early times; nor, in these days of ice and sanitation, can you imagine their daily hardships Yet they had the instinct, not only to "carry on" but to do things. When the timid politicians in London suggested that the rock ought to be abandoned, those who had builded upon it rejected the idea with scorn. To-day it stands out a beacon light in the Far East, radiating commerce and the British ideals of all that is best in modern civilization. In the hour of peril in which the Empire found itself it came forward with its help before the call was given. The young men left their offices for the trenches, the older men joined the local defence corps, and the Colony as a whole increased its taxation and made voluntary contributions for war purposes. Foremost in these patriotic efforts were the business men of the Colony whose first thought was the one great need of the world, the saving of civilization from the Great Blonde Brute. Now when the world is safe once more, the business men of the Colony will turn their full energies to the work of construction so that the future expansion and development of Hongkong will surpass its past history, wonderful as that is. For Hongkong is destined to become a place famous, not only as the nerve centre of the trade of the Far East, but as a great manufacturing centre. The Argosies will become larger, collectively and individually. The Pacific will have its arteries of commerce, its lanes of shipping, as important as the Atlantic, and the City which, in seven and seventy years has grown up and transformed its environs as if the ward of a magician had touched the granite rock, will continue its amazing career of development. Other centres of industry and commerce in the Far East will expand and new ones may spring up. But nothing short of the eclipse of the British Empire can prevent Hongkong from fulfilling its destiny. In seven years the population grew from a few hundreds to 50,000 and in seventy years it has grown from 50,000 to 500,000. The medical officer of health recently expressed the opinion that, so great has been the recent influx of Chinese, the population is now one million. In sixty years British tonnage had increased tenfold. In 1854 the revenue of the Colony was about $150,000; in 1916 it was $13,833,386, and it increases each year. It is dangerous to indulge in prophecy and in this case detailed fore-casts are mere guesses. For he would be a bold man who would set any limit to the growth of the British Colony in South China during the next century. The history of the past, a casual glance at the Colony to-day, with its wharves, its dockyards, its factories, its modern offices, and the palaces on the Peak, remind us of the American saying "The limit is the sky." We can only hope that the Colony will attract men of business sagacity and driving power in the future as it has done in the past. The very momentum of its progress ensures that it cannot become stagnant. But we, of this generation, are eager that its future rate of expansion shall even eclipse that of the past.

Trade During 1917

The war has had its effect upon Hongkong, but taken as a whole the year 1917 was not a bad one for the colony. Ship-building and sugar refining, which are among the principal industries of the colony did very well; shipyards worked to their full capacity, the only limitation being the difficulty of securing materials for certain purposes. The chief feature of the 1917 trade was the predominance of American imports and exports; the declared exports from Hongkong to the United States being valued at $25,543.413 gold, as compared with $9,756,890 in 1916, $5,590,442 in 1915, $4,474,933 in 1914 and $5,203,980 in 1913. The American Consul-General in Hongkong reporting on the industries of the ports says:

During the past year a modern tannery has been constructed which is operating on American lines under a foreign tannery expert; and also a modern biscuit factory or cracker factory. Both of these establishments were started by Chinese capital and largely with American machinery and according to American methods. A soap factory of considerable importance, which was operated by German interests before the war, was overhauled and partially refitted and is commencing the manufacture of soap on a considerable scale. Other important industries include several cement factories owned by a Hongkong company and a large rope works, which has had more than an ordinary success, although the decrease in shipping coming into the port made considerable difference in its local sales.

Chinese industries, including the ginger and other preserve factories, canning establishments, rice-hulling establishments, small foundries, glass works, mirror factories, distilleries, and the like, have done well. There was a setback to the grass and rattan furniture industry, due to the increased freight rates on such goods for export, and furniture making generally has been rather backward because of the high price of teak and other hardwoods.



VICTORIA (HONGKONG) FROM THE SEA

The increased cost of brass interfered very materially with the work of brass founders and curio makers, while workers in other metals, such as lead beaters, also found it difficult to stay in business because of the cost and the shortage of supplies and the restrictions upon the export of their output. Tin smelting and refining boomed as a result of the strong demand for the metal in the United States and Europe. The extension of the manufacture of jinrikshas and similar commodities has been prevented also by the high cost of materials. The scarcity and cost of coal in Japan, North China, and Indo-China, which at times approached the famine stage, crippled various Hongkong industries and materially altered conditions under which they operate.

The knitting factories in Hongkong had a fair year and greatly widened the market for their cheap knit goods, particularly hosiery and singlets. The cheapness of Japanese knitting yarn compared with American yarns heretofore employed by most of the factories led to the more general manufacture of a lower grade of goods and an abandonment, for the time being, of American and British yarns, which could not be got at any price In September and the first part of October a large number of the mills were compelled to shut down for a time because of the lack of materials at a workable price.

The chief meat, dairy, and produce company in Hongkong is seriously entering upon the packing of meat in tins and otherwise for export, and promises to become an important, if not a controlling, factor in the tinned-meat trade in southern Asia. The embroidery makers have passed from old Chinese designs to the manufacture of embroidered goods from late European and American models on order. Local paper makers are undertaking the manufacture of a higher grade paper; foundrymen are making more and more hardware in foreign style; canning companies are extending their list of goods packed for export.

The Port

PORT CHARGES.—Hongkong is a free port, no duty being charged on imports except tobacco, wine and spirits. There are no tonnage or wharf dues. Light dues at 2c Mexican per net registered ton for each call.

PILOTAGE.—Pilotage is not compulsory. The rate is $15 Mexican, in or out.

STEVEDORING.—The rate for loading or discharging general cargo is 10 cents per ton. The cost for a 50-ton lighter per day is $14. General labour costs about 40 cents a day.

ACCOMMODATION.—All buoys are government property and are hired at the rate of $8 for A Class, $6 for B class, and $4 for C class, per day or part of a day. The wharves are as follows:

Hongkong & Kowloon Wharf & Godown Co.

West Point Wharf:		
Length of quayage	328	feet
Depth of water at high water	30	,,
Depth of water at low water	21	,,
Kowloon Wharves (four):		
Length of quayage	3,000	,,
Depth of water at high water	35	,,
Depth of water at low water	25	,,

Notes: Vessels can come alongside wharf and leave at any state of the tide; about 1,000 tons a day per steamer can be discharged. Vessels which do not come alongside wharves can discharge into the company's cargo boats. The wharves are protected from N. E. gales; work generally goes on as usual in typhoon weather. The warehouse capacity is 500,000 tons. A railway siding extends to the Kowloon-Canton Railway.

Holts' Wharves, Kowloon.

No. 1 Wharf:		
Length	470	feet
Depth of water at low tide	32 to 39	,,
Nos. 2 and 3 Wharves:		
Length of quayage	1,000	,,
Depth of water at low tide:		
No. 2, 42-ft. at S. end; 6-ft. at N. end; No. 3, 34-ft. at S. end; 6-ft. at N. end.		
Praya Wharves.		
Length of quayage	650	,,
Depth of water at low tide	5 to 10	,,
1 steam crane, 5 tons; 2 steam cranes, 2 tons each.		
Anglo-Saxon Petroleum Co.'s Wharf (for private use).		
Length	632	feet
There is a T-head.		
Depth at high water	26	,,
Depth at low water	19	,,
Hongkong, Canton & Macao Steamboat Co.'s Wharf.		
Length	300	feet
Depth alongside at high water, about	30	,,
Lee Kee & Co.'s Wharf.		
Length	300	,,
Depth alongside at high water, about	30	,,
Yuen On Steamship Co.'s Wharf.		
Length	200	,,
Depth alongside at low water	20	,,
Standard Oil Co.'s Wharves (at West Point).		
Length	113	,,
Depth alongside, L. W., O. S. T.	24	,,
Lai-Chi-Kok Wharf.		
Length	275	,,
Depth alongside, L. W. O. S. T., S. end 29'6", N. end	28	,,
Hongkong & Whampoa Dock Co. Wharves.		
Total length	3,432	,,
Depth alongside at H. W. O. S. T. 25 to	30	,,
(Steam sheers to lift 80 tons)		
Kowloon-Canton Railway Wharf (Kowloon).		
Extreme breadth available	200	,,
Depth alongside; low water, 30-ft., high water	38	,,
Anglo-Saxon Petroleum Co.'s Taikoktsui Wharf:		
Length	135	,,
Depth alongside, low water 21-22-ft., high water	26-28	,,
D. Lapraik & Co.'s Wharf		
Length	300	,,
Depth alongside at low water	23	,,
China Merchants Wharf.		
Length	295	,,
Depth alongside at low water	25	,,
Taikoo Dockyard & Engineering Co.'s Wharf.		
Quarry Bay Quayage		
Length	3,200	,,
Depth alongside, H. W., O. S. T.	39	,,
1 100-ton electric crane and several traveling cranes to lift 10 and 20 tons.		
Taikoo Sugar Refining Co.'s wharves (Quarry Bay)		
Iron Wharf:		
Length of T-head	199'3"	
Depth alongside at low water springs	30'	
Steel Wharf:		
Length	377'	
Length alongside at low water springs	30'	

The complete list of dry docks and slips will be found on page 201.

TRANSPORTATION FACILITIES.—In normal times there are sailings almost daily to coast ports, such as Amoy, Swatow, Canton, Foochow, Shanghai; Keelung (Formosa); Manila, Iloilo, Cebu (Philippine Islands); Saigon, Haiphong (Indo-China); Bangkok, Singapore and Penang, by the Indo-China Steam Navigation Co., China Navigation Co., China Merchants Steam Navigation Co., and the Osaka Shosen Kaisha.

Service to Canton and Macao is furnished with two daily sailings by the Hongkong, Canton & Macao Steamboat Co., and in addition there are several other concerns.

Communication between Hongkong and the Philippines is maintained regularly by the Indo-China Steam Navigation Co. and the China Navigation Co., with sailings twice weekly. In addition, Pacific liners touch at Manila on their way to Hongkong. The Nippon Yusen Kaisha's and Eastern & Australian Steamship Company's boats for Australia also provide service between Hongkong and the Philippines.

In normal times there is a regular weekly service between Hongkong and Calcutta via Straits Settlements maintained by the Indo-China Steam Navigation Co., the British India Steam Navigation Co., the Apcar Line and the Nippon Yusen Kaisha.

Between the United Kingdom and Hongkong, normally, service is provided by the Peninsula & Oriental Steam Navigation Co. and the Messageries Maritimes with weekly sailings and the Nippon Yusen Kaisha with fortnightly service. Cargo service in the same run is provided by the Blue Funnel, the P. & O., the N. Y. K., the Royal Mail Steam Packet Co., Glen Line, and Ben Line.

Between Hongkong and North America regular passenger and freight sailings are provided by the Canadian Pacific Ocean Services, the Pacific Mail, the Toyo Kisen Kaisha, the N. Y. K., the Osaka Shosen Kaisha, the Java-China-Japan Line, the Rotterdam & Netherland Lloyd, the Waterhouse Lines, and the Blue Funnel.

Sailings between Hongkong and Japan are very frequent—hardly a day passes without one or more sailings to and from Hongkong.

Between Hongkong and South America the Toyo Kisen Kaisha maintains a regular service.

Between Hongkong and New York there are normally three or four sailings a month.

RAILWAYS.—The Kowloon-Canton Railway extends from Kowloon, on the mainland opposite the Island of Hongkong, to

Canton, a distance of 112 miles, and provides rapid and frequent passenger and freight service between the two places. From Kowloon to Shumchun, a distance of 22½, the line is owned by the Hongkong Government; the stretch of 89½ miles between Shumchun and Canton is owned by the Chinese. The line was opened for service in October, 1911. The cost of the Chinese section was $12,594,227 Mexican; that of the British section was relatively much higher, due largely to the cost of the tunnels on the line, totalling $13,284,425 Mexican. The Canton-Hankow line, construction of which is being pushed simultaneously from Canton and Hankow, will connect with the Canton-Kowloon line by a loop at Canton.

Shipbuilding in Hongkong

(*Contributed*).

In his well-known book "China in Transformation" A. R. Colquhoun wrote "In the Colony of Hongkong most of the wealth is in the hands of the Chinese." It is still true as when the book was written, for the disturbed state of Canton has led many Chinese merchants of that city to invest their money within the safe precincts of the British Colony. We might go further than Colquhoun and say of Hongkong that most of the wealth is in the hands of, and all of the manual labour is supplied by the hands of, the Chinese. But all of the constructive ability, all of the administrative genius, all of the imagination so essential for modern industry, is supplied by the white man. You might say that the Chinese supply money and brawn and the British subjects money and brains. It is therefore not surprising to find that, in the three large dockyards of the Colony, all of the manual labour is supplied



THE STANDARD SHIP "WAR DRUMMER" BEING LAUNCHED BY THE HONGKONG AND WHAMPOA DOCK COMPANY, HONGKONG

List of Dry Docks and Slips—Hongkong

NAME	Extreme length	Length on bottom	Breadth at entrance	Height of sill above bottom of Dock	Depth on sill at H.W., O.S.T.	PATENT SLIPWAYS: Extreme length	Length of cradle	Draft on keelblocks, H.W., O.S.T.: Forward	Draft on keelblocks, H.W., O.S.T.: Aft.	Lifting Power	Difference between H.W. at O.S.T. and ordinary neaps	PROPRIETORS	REMARKS
Hope Dock (granite), Aberdeen ... ... (*b*)	432.6	432.6	84.0	Nil	23.9						3.0	Hongkong & Whampoa Dock Co.	Depth at H.W., highest springs, 25.9; at lowest neaps 19.6
Lamont Dock (granite), Aberdeen ... ... (*b*)	334.0	333.0	64.0	0.3	15.3						3.0	do.	Depth at H.W., highest springs, 17.0; at lowest neaps 13.6
No. 1 (granite), Kowloon ... ... (*a*)	700.0	709.0	86.0	2.0	30.0						3.0	do.	Depth at H.W., highest springs, 31.6; at lowest neaps 27.3
No. 2 (granite), Kowloon ... ... (*b*)	394.0	370.0	74.0	2.6	18.6						3.0	do.	Depth at H.W., highest springs, 20.0; at lowest neaps 15.6
No. 3 (granite), Kowloon ... ... (*c*)	265.0	264.0	49.3	2.6	14.0						3.0	do.	Depth at H.W., highest springs, 15.6; at lowest neaps 11.6
No. 1 Patent Slip, Kowloon (steam power) (*d*)						700.0	240.0	13.0	21.0	1,200		do.	
No. 2 Patent Slip, Kowloon (steam power) (*e*)						600.0	200.0	8.0	15.0	1,000		do.	
Two slips for launches, Kowloon ... ... (*f*)												do.	
Cosmopolitan (granite), Taikwokshui ... ... (*g*)	468.0	466.0	85.6	2.3	20.0						3.0	do.	Depth at H.W., highest springs, 21.6; at lowest neaps 18.0
Admiralty Dock ... ... No. 1 Dock	574.6	574.6	95.0	4.6	39.3							Government	Can be extended by 23.6
Dry Dock ... ... (*h*)	787.0	750.0	88.0	4.6	34.6						2.0	Taikoo Dockyard & Engineering Co.	
No. 1 Patent Slip (electric power) ... ... (*i*)						1030.0	280.0	15.4	25.0	2,700	2.0	do.	
No. 2 Patent Slip (electric power) ... ... (*j*)						993.6	250.0	15 6	24.0	2,000	2.0	do.	
No. 3 Patent Slip (electric power) ... ... (*k*)						993.6	230.0	15.6	24.0	2,000	2.0	do.	

(*a*) 3 cranes of 5 tons capacity.

(*b*) 1 crane of 7 tons capacity.

(*a*, *b*, *c*, *d*, *e*, *f*) sheer legs to lift 70 tons with 25-ft. overhang; water alongside 25-33-ft.

(*g*) Divisible into two at about half length. Width of entrance at inner caison, 65.9. Two cranes of 5 tons, sheer legs of 30 tons capacity.

(*h*, *i*, *j*, *k*) One 100-ton electric crane with 42-ft. overhang; clearance of jib above edge of wharf, 34-ft.; water alongside 39-ft. H.W., O.S.T.

(*i*, *j*, *k*) Provided with several travelling cranes to lift 10 to 20 tons.

by the Chinese, but all of the direction is controlled by the British.

It was in 1857 that the first attempt was made to establish a dock in the Colony. The site chosen is not now a popular one; it was near the little fishing village of Aberdeen on the side of the island remote from the mainland of China. There were doubtless good reasons which led Mr. Douglas Lapraik and Captain Lamont to fix on that site; it is not at all unlikely that, in the course of the inevitable growth of the City of Victoria and the increase of means of communication, the little fishing village of Aberdeen will become absorbed, some day, by the city.

In the early days of the shipping trade with Canton the vessels were repaired at Whampoa, in a native-owned yard. In 1856 a Mr. Couper owned the dock there. He had been formerly in the employ of the P. and O. Company and no doubt that firm encouraged him in his enterprise, as it was to their interest that their ships should be repaired under Eurcpean supervision. But in 1856 the Whampoa Dock was more or less destroyed and Couper was captured. From that day all trace of him was lost. His son was compensated with $120,000 and he rebuilt the dock. Eventually he sold it to the promoters of the Hongkong Dock. In 1863 a company called the Hongkong and Whampoa Dock Co. was established in Hongkong. The original founders of the company were Mr. James Whithall of Messrs. Jardine, Matheson and Co., Mr. Thomas Sutherland, who but recently retired from the position of chairman of the P. and O. Co., and Mr. Douglas Lapraik. On its formation the capital of the company was $240,000; it is to-day $3,000,000.

It appears that the Whampoa establishment was more important than the docks of Hongkong, in the early days, for we find that from 1866—69 all of the large ships belonging to the English and French mail companies were docked there. But finally the Whampoa dock was sold, with certain definite restrictions as to its use, to the Chinese; and all of the ships from Europe were docked in Hongkong. To-day the Hongkong and Whampoa Dock Co. owns extensive works at Kowloon and smaller premises at Aberdeen. It is probably sentiment that makes the Company retain the rather ugly word "Whampoa" in its title; its admirers might well assure it that it would be equally popular with some shorter name; indeed it is always known locally as "the Dock Co."

To-day the Company is at the zenith of its activity and it is very prosperous. But, like many other flourishing concerns in the Far East it has passed through its period of crisis. Thus, in 1875, the shares were at a 60 per cent. discount, and the dividends gave no satisfaction to the shareholders. So the management wisely made arrangements to reduce competition The Cosmopolitan Dock, at Kowloon, and a rival establishment belonging to a Captain Shands were taken over, in 1879 and 1880 and the good days set in again. A period of extraordinary prosperity followed until 1908 when the simultaneous opening of the Naval Dockyard and the Taikoo Dock ended the monopoly. But there are still stories of the queues of ocean going steamers waiting outside of "*the* Dock" Company's premises during these halcyon years from 1880 to 1908. And yet it is doubtful whether, even in those days, the Dock Company's prosperity was as great as it is to-day. For, despite the competition of the last ten years, there is more work for the Dock Company to-day than at any other previous period of the firm's remarkable history. It is now, not only a ship repairing yard, it is continually receiving shipbuilding orders and it is probable is compelled to refuse some of them. A new extension is in progress. Yet it should be remembered that from about 1908-1913 the prospects for the Company appeared anything but rosy. Lucky indeed were the optimists who bought Dock Shares in 1913. It is annoying to calculate the growth of £1,000, if invested in Dock shares at about a 2s. dollar in those days and realised now with the local dollar at 3s. 4d. But of such regrets is life in the Far East very full!

It should be mentioned of the Dock Co. that in 1880 the British Admiralty made a grant of £25,000 towards the cost of building a large new dock, on condition that British warships should have the right of priority of entrance for the next twenty years. The dock was completed, and when the period had elapsed the Admiralty had built and equipped their own Royal Naval Dockyard. They placed it right in the centre of the sea-front of the city of Victoria; it is said that the site was selected by a local Naval resident so that he might have but a minimum distance to travel to and from his Peak residence. It certainly seems strange that such a commercially valuable site was chosen.

To-day there are about 5,000 Chinese and 100 Europeans employed by "the Dock Company" and its annual disbursement in pay is nearly $2,500,000. Sixty years ago there were about 100 Chinese workmen employed with fifteen Europeans and the salaries and wages came to less than $150,000 per annum. The Dock Company controls no less than six docks and two patent slipways. The whole gives an aggregate length on keel blocks of about 3,000 feet. The largest dry dock is 700 feet long. The company is managed by a local Board of Directors. The Hon. Sir Paul Chater, C.M.G., if not actually one of the originators of the enterprise has been continuously a director for many years longer than anyone else.

The chief responsibility of such a large undertaking of necessity falls upon the Chief Manager. A remarkable Scotsman, David Gillies, filled that office for some years.

Mr. R. M. Dyer, B.SC., M.I.N.A., distinguished engineering graduate of Glasgow University, and son of Dr. Dyer, one of the pioneer British Professors in Japan, as Chief Manager, has control of the office and the works. Upon his shoulders has fallen the great responsibility of building the large ships constructed since the outbreak of war.

The Taikoo Dockyard

Along the China Coast you will hear the old China hands talk about "Mr. Butterfield" their name for the firm of Messrs. Butterfield and Swire Ltd. The "London office" is known in the city as John Swire and Co. and the Chinese recognise the well-known Far Eastern firm as "The Taikoo Hong." To-day the firm manage the steamships of the China Navigation Co. and act as agents for Messrs Alfred Holt & Co. in this part of the world. Doubtless encouraged by the progress of those lines, "the Taikoo Hong" suddenly startled Hongkong with the announcement that they were about to build a dock. The very idea seemed daring, but that they should select, as a site, a granite hillside running down into the water, seemed incredible. Yet it was quite true. To-day you can visit one of the most modern shipbuilding yards in the world and, if you are observant, you will see that it has been made by literally carving out the granite hillside.

It was opened in 1908. The area covered by the yards is five and a half acres of land. The largest dock is 787 feet long and of its three patent slipways the largest is over 1,000 feet long. The great accomplishment of this company was the building and fitting out of the Blue Funnel (Alfred Holt & Co.'s) steamer *Autolycus* launched from the Taikoo slipway in 1917. She was the biggest ship launched in the British overseas possessions—bigger than the biggest vessel constructed, at the time, in Canada or Australia—and she had a length of 441ft. She has since become a victim of the German submarines, but the Taikoo people are only stimulated by her fate to increase their efforts on the other vessels which they are building.

Messrs. W. S. Bailey & Co. and Messrs. MacDonald & Co. also own smaller establishments. But a feature of the last few years has been the growth of the small shipyards managed and owned by the Chinese. In the year 1916 there were as many as 54 vessels of many different sizes built in the Colony. The Taikoo firm headed the list of new tonnage, with a total of 8,814, but a Chinese, who began life in a very humble sphere, turned out 25 vessels, mostly motor-boats. As an example, however, of the sort of thing that the native boat-builders are capable of producing, the Cheung Chow ferry boat may be mentioned. This runs to an island ten miles distant and it often meets very heavy seas. It can carry two or three hundred passengers, and it is capable of doing the journey in an hour. It was entirely designed, built, engined and boilered in Hongkong by local Chinese. There are several similar establishments in which steam launches are built throughout and all sorts of repairs executed.

As we contemplate the activity of shipbuilding in Hongkong we must not forget the work of the British Royal Navy. In these days of war it is not wise to discuss details of such work; it goes on, to the outsider silent, but impressive, for we all know that the establishment in Hongkong has done everything that is

possible to help the service of which it forms a part. Any day you can see the stream of Chinese workmen filing out of the gates and anyone entering the Colony quickly notices the workshops, the cranes and the other paraphernalia associated with a Dockyard.

The Future

Shipbuilding is to-day Hongkong's premier manufacturing industry. And yet it is a new industry for the Colony. There are now many thousands of Chinese skilled in it and the difficulty is to keep the labour when it has been trained. The men who initiate the smaller yards are usually old employees of the Dock Co. It is most unlikely that, in this generation, such native establishments will seriously compete with the Hongkong and Whampoa Dock Co. or the Taikoo Yard, because the Chinese are reluctant to combine for such big projects and they have no experience of management. But it must be remembered that young Chinese, with wealthy connections, are becoming trained in scientific methods and that will produce an effect. It is almost certain that a larger number of small engineering and shipyard establishments will grow up in Hongkong. It is also quite certain that the two large companies already established will extend their activities.

At present all of the raw material needed for shipbuilding is imported, mostly just now from America. All of the coal comes from Japan. Yet in the province of Kwangtung, accessible to these dockyards by water, there are abundant stores of coal and iron. When that supply has been properly organised Hongkong will become one of the largest, if not actually the largest, of the shipbuilding centres of the world. The facilities for launching are excellent; there is plenty of deep water near the Dockyards, which are well away from the path of the ships entering and leaving the harbour.

A feature of the last two or three years has been the growth in size and numbers of vessels using internal combustion engines. These are, at present, employed in the river traffic of the Canton Delta and the West River. But it is by no means improbable that trade along the coast will be carried on with vessels propelled by these very economical motors. Crude oil is being used a great deal as fuel and it certainly appears to have a good future before it in this part of the world. During the first eight months of 1918 the value of internal combustion engines imported to Hongkong was more than £150,000.

The fuel problem is the real difficulty which faces the Colony. Assurances were recently given in the Legislative Chamber of Hongkong that every effort was being made by the British Government to push forward the completion of the Canton, Hankow railway. There is any amount of coal along the line. It is actualiy possible to bring coal down by water now from Kwangtung at a total cost of $10 a ton and that figure provides a very good royalty for the native owners of the mines. But it is impossible, because of the officials and the regulations, to bring any of the coal to this market, with the result that local prices are about $35 a ton. During the first nine months of 1918 the value of the coal imported to Hongkong was well over £600,000. At present prices crude oil, as a fuel, is ever so much cheaper. None of the local firms have yet commenced to build Diesel oil engines, but there seems to be no reason why they should not do so. Large vessels of the "Selandia" type have come out from Europe to the Far East and crude oil has been the fuel used. We may see an attempt made to develop that kind of cargo—carrier. But it will depend upon the price of coal.

It must be confessed that the ordinary marine engineer does not take kindly to innovations. "Give me steam," he says chiefly, because he likes the old type whose peculiarities he has learnt by experience. But in these days we must be prepared for rapid changes.

"The Dock" Co. have recently embarked upon a very large scheme of extension. What is practically a new yard, with complete machine shops of the most up-to-date type is being constructed. It is quite evident that the local Directors are optimistic about the future, for the capital outlay must be very great. There are also local rumors of a combine of Chinese capitalists who are preparing plans for a new scheme, but it is difficult to obtain any information on the subject.

In any case the prospects for shipbuilding in Hongkong are good. We may expect to see a steady increase in the output each year. There must always be a great deal of repair work. It will be a long time before there is a glut of mercantile vessels, because the carrying trade on the Pacific is only just in its infancy and just now ships in demand for all of the seven seas.

The Facilities for Shipping and Handling Cargo in Hongkong

(BY OUR SOUTH CHINA CORRESPONDENT.)

Hongkong exists as one of the greatest commercial emporiums of the world because of its magnificent harbor. It is the finest natural anchorage on the Asiatic side of the Pacific. But in these days of keen commercial competition it is not enough to leave everything to Nature and a great deal of the trade of Hongkong would quickly pass away to other places unless there were provided modern facilities for handling and storing cargo, ship-repairs, etc. The growth in the size of ships has made it imperative to employ new methods for dealing with shipping problems.

A President of the Institution of Civil Engineers in London said, a few years ago, of the docks at Liverpool that "the capacity of the wet docks in the Mersey alone, as measured by the length of quays, is two-thirds of that of all the wet docks in the rest of the world, if we do not reckon British ports." In the Far East there still remains the cheap man-power, and enormous quantities of cargo are taken from and put aboard ships in Hongkong which lie out in the stream. Each year, however, the proportion of that class of work gets less and less, and the day may not be far distant when all of the ships will come alongside quays.

At the present time we may say that nearly all of the water-front on the island of Hongkong is used up by smaller steamers, junks, etc., which discharge cargo into numerous godowns belonging to many different owners. Some of the steam-ship companies well-known in the Far East such as the China Merchants, "Indo China," Douglas, and O.S.K. have wharves along this praya. The vessels so berthed run up and down the China Coast. A large number of river steamers, running to Canton, Macao, Kongmoon and the West River, berth alongside this praya. The whole of the long water-front is reclaimed land.

All of the most modern and well-equipped godowns are situated on the main land however. The fact that Kowloon is the terminus of the Railway that now runs to Canton and that may ultimately connect up with Calais is perhaps the reason why the Directors who planned the large godowns selected Kowloon sites.

The two large concerns interested are Messrs. Alfred Holt & Co. of Liverpool and the Hongkong Wharf and Godown Co., Ltd. The latter is a local Company and the shares are quoted on the local exchange, all of the directors being resident in Hongkong.

Holt's Wharf, Kowloon

This property is owned by the Ocean Steamship Co., Ld. (Messrs. Alfred Holt & Co., Liverpool), and the local agents are Messrs. Butterfield & Swire. It is situated on the Kowloon side of the harbor near Signal Hill.



S.S. "KWEI-SANG" BUILT AND ENGINED COMPLETE AT KOWLOON DOCKS

There are two wharves 472-ft. and 452-ft. long respectively They are provided for the berthing of ocean steamers to discharge or load cargo, each having a depth of 32 feet at low water spring tides.

The No. 1 wharf is constructed of steel joist piles driven in pairs and encased in a steel cylinder filled with concrete; the upper portion is built of structural steel joists and channels; the deck is hardwood laid on timber joists. This wharf is 472 feet long with a minimum width of 40 feet and runs parallel to the praya

The No. 2 Wharf is constructed of reinforced concrete piles driven in groups of three, encased in reinforced concrete cylinders filled with mass concrete. The lower bracing is also reinforced concrete, but the upper portion of the wharf is built of structural steel joists and channels with hardwood decking carried on timber joists. This wharf is 452 feet long by 50 feet wide and is connected to the Prava Wharf by Piers No. 1, 2 and 3. Piers No. 1 and 3 are fitted with bascule bridges, which allow lighters, etc., to pass inside to land or receive cargo. This increases the pier and praya accommodation for delivery of cargo and also provides two basins for the berthing of the Company's lighters.

The Praya Wharf runs parallel to the sea wall from No. 1 wharf to the west end of the property, and is 30 feet wide constructed of steel with similar decking to the other wharves.

A railway siding connects with the Kowloon-Canton Railway. The lines run on to No. 1 wharf and cargo can be worked direct to or from steamers from the railway trucks. Weights up to 25 tons can be handled.

The godowns are of modern construction. The original storage accommodation consisted of four 4-storied godowns each 140 feet by 80 feet of steel frame construction with brick walls. The lower floors, which are used as steamer or transit godowns, are fitted with mezzanine floors giving a total area of 16,800 feet each. The upper floors provide accommodation for cargo placed on storage, and a portion is reserved as a King's Bonded Warehouse. There is also a shed between No. 1 and No. 2 Godowns with an area of 9,600 feet, which is used for the storage of steamer cargo and machinery, a 5-ton crane being provided for heavy loads. There are also hazardous and extra hazardous godowns for the storage of cargoes of this nature. A new reinforced concrete godown (No. 5) 100 feet by 80 feet with five floors was completed this year, and is now in use. This is probably one of the finest structures of its kind in the East. A similar godown to the above (No. 6) is under construction. This has an area of 160 feet by 100 feet and will also have five floors.

A strong room is provided for the storage of specie, etc.

HANDLING OF CARGO.—Cargo is landed direct to wharf from steamers' derrick and received on specially constructed trucks, and can be conveyed direct to any part of the godowns without any unnecessary handling. Two hundred of these trucks are in use. Each godown is fitted with two electric lifts, which carry cargo to or from the mezzanine and storage floors. On No. 1 Wharf there are two 5-ton Cranes, one travelling and the other fixed. No. 1 & 2 Piers each have a travelling gantry crane to lift 2 tons at 42 feet radius. Two Derricks with a steam winch are fitted on the Praya for handling light cargo. Additional cranes for No. 2 Wharf, No. 3 Pier and the Praya Wharf are on order.

Throughout the premises great precaution is taken to prevent fire, and all godowns are fitted with interior fireproof doors. Each floor in the godowns is provided with two fire hydrants and hoses, besides which there are 22 hydrants round the building. Water is supplied by two 55 B.H.P. Electric Pumps, which draw water direct from the sea, and a large quantity of water is also carried in tanks on the roofs. An excellent fire alarm system is fitted throughout all godowns and fire drills are held periodically. The power station on the property consists of two 125 H.P. Campbell Gas Engines and Dynamos with Suction Gas Plant, and it supplies all current for arc lamps, lifts and Fire Pumps. The godowns and wharves are brilliantly lighted by arc lamps and high powered incandescent lights for night work.

There is a fleet of 20 lighters for the handling of cargo to or from vessels in the stream. These lighters which are built to Lloyd's rules vary from 60 to 500 tons giving a total carrying capacity of about 6,000 tons measurement or 4,600 deadweight. Three of these lighters are fitted with steam winches and derricks capable of lifting weights up to 15 tons. All lighters have windlasses of a heavy type with large anchors and cables to provide for safety when anchored in typhoons.

Two large and one small tugs are used for towage purposes. There is a permanent staff of six Europeans and over 200 Chinese. In going over these premises one is struck by the fact that no expense or trouble is spared to give efficient and rapid handling of cargo.

THE WHARF AND GODOWN COMPANY.—There are three distinct branches of work done by this company, (1) The landing, shipping and transhipping cargo at the wharves. (2) The landing, shipping and transhipping cargo in the stream. (3) The warehousing of cargo.

The Company own a water frontage of 2,000 ft. in length at Kowloon. There are four wharves, each with berths for ocean-going steamers, and they are capable of berthing steamers 650 ft in length with a draft of 31 feet at lowest spring tides.

The present system of working steamers discharging at the wharves is as follows:—The cargo is put overside by ships' tackle and placed direct on to trucks on the wharves which are run on light railway lines into transit godowns where the cargo is sorted by marks and is delivered to consignees or is transferred as desired to the storage godowns. If a vessel desires to work both sides, the cargo on the streamside is discharged into lighters supplied by the Company.

Similarly with cargo transhipped from steamer to steamer at the wharves. This is shipped from the godowns or the cargo is placed on trucks and run direct on light railway lines alongside the on-carrying steamers.

With cargo delivered from transit godown, the system is for consignees to obtain an import permit from the Imports and Exports Department and Agent's countersignature to their Bill of Lading, after which the Bills of Lading are stamped off for delivery at the Company's Main Gate and consignees go to the godowns where their cargo is delivered to them, seven days' free storage (not counting date of arrival) being allowed, after which overtime is charged.

If all of the berths are occupied and there is no accommodation at the wharves, steamers discharge in the stream direct into the Company's lighters which are brought to the Company's premises. The cargo is lifted therefrom by locomotive cranes on to trucks, and dealt with as with cargo from steamers at the wharves. The cargo shipped to vessels in the stream is taken direct into lighters which are placed alongside the on-carriers For this purpose the Company maintains a fleet of eight steam tugs and eighty lighters varying in capacity from 75 tons to 300 tons each.

Considering the warehousing of cargo we find that only a portion of a steamer's cargo is taken direct by consignee from the transit godowns, the balance usually being transferred to the storage godowns under instructions from the consignees. The greater part of the merchandise is held under lien to the various Banks. Warrants are issued for such cargo and the merchants issue Delivery Orders as and when required. The goods are stored in the Company's extensive range of godowns having a total capacity of about 300,000 measurement tons. A new three-story (and mezzanine floors) reinforced concrete godown occupying an area of 24,000 square feet is approaching completion and plans are being prepared for another four-storey (and mezzanine floors) reinforced concrete godown to occupy an area of 33,000 square feet. Modern equipment and machinery is used for transferring cargo to storage.

Besides the Kowloon establishment, this Company owns a wharf for local coasting steamers and storage godowns with a total capacity of about 65,000 tons at West Point on the Island of Hongkong. These premises are used chiefly for warehousing Chinese produce, flour, sugar, etc. The whole of the Company's Kowloon premises, wharves and godowns are linked up by light railways enabling cargo to be handled on trucks, thus minimising the risk of damage from careless handling by coolies. Heavier tracks are laid from end to end of the water frontage for locomotive cranes capable of lifting up to 15 tons at 25 feet radius, 10 tons at 40 feet radius, and 2 tons at 60 feet radius.

Throughout the premises every precaution is taken against fire including a powerful "Shand Mason" Steam Fire Engine, and a system of fire hydrants at intervals all over the Company's premises connected direct with the Government mains. There is also an effective system of detectives and watchmen to prevent robberies and pilferage. The Company maintains and houses a large staff of Swatow coolies trained to handle cargo.

The terminus of the Kowloon-Canton Railway and the wharf from which the ferries to Hongkong depart almost adjoin the Company's premises, both being within three minutes' walk of the wharves.

Enough has been explained to show that everything connected with the port of Hongkong is up-to-date. There is keen rivalry in Hongkong in commercial circles and that always leads to efficiency. The volume of trade is increasing so rapidly that it is not surprising to hear of all sorts of new extensions.

MERCHANTS.—Andersen, Meyer & Co., Ltd.; Arthur & Co., Ltd.; Banker & Co.; Botelho Bros.; Bradley & Co., Ltd.; Butterfield & Swire; China Overseas Trading Co.; S. J. David & Co.; Ltd.; Paula Davis & Co.; Dodwell & Co., Ltd.; The Robert Dollar

Co.; Donnelly & Whyte; Floquet & Knoth; Walter Ford & Co.; Gerin, Drevard & Co.; Getz Bros. & Co. of the Orient, Ltd.; Gibb, Livingston & Co.; Gilman & Co., Ltd.; Hastings, Hodge & Co.; W. G. Humphreys & Co.; John D. Hutchison & Co.; Jardine, Matheson & Co., Ltd.; P. A. Lapicque & Co.; Lau Chu Pak & Sons; W. R. Loxley & Co.; Manners & Backhouse, Ltd.; Marshall Field & Co. of Chicago; G. Martini, Ltd.; A. R. Marty; Mitsui Bussan Kaisha, Ltd.; N. S. Moses & Co.; Mustard & Co.; Newall & Claxton; Reiss & Co.; Robertson, Wilson & Co.; J. M. Rocha & Co.; Alex. Ross & Co.; David Sassoon & Co., Ltd.; E. D. Sassoon & Co.; Shewan. Tomes & Co.; Thomas W. Simmons & Co.; H. Skott & Co.; H. Stephens & Co.; Thoresen & Co.; Union Trading Co.; B. Monteith Webb & Co.; Andrew Weir & Co.; Harry Wicking & Co.; The Wing On Co., Ltd.

JAPAN

The foundation of the Japanese Empire is claimed by Japanese to date back to 660 B.C., but the rise of modern Japan, with her increasing industries and her increasing trade, her compulsory education, conscription, creation of a big navy, and her advancement along western lines, is but of recent origin. The Japanese Empire consists of a number of islands in the Pacific, of no great importance in earlier days, but the advent of foreigners and their methods gave the necessary impetus to Japan to strike out for herself. Japan, with very few exceptions, has made headway quicker than any other nation and she, with no greater assistance than the natural resources of her country, has left behind the bigger, richer but more lethargic country of China. The close proximity of Japan to China and the ability of the Japanese better to understand the Chinese than any other people has led to the greatest foreign trade of the Celestial Empire taking place with her island neighbors.

The war, the absence of European vessels from the Far East, the demand by Europe of only essential cargoes and a hundred and one restrictions gave Japan markets which she had hitherto not exploited. Japan did not win them, and this is a fact which the Japanese Government is now apparently studying at the suggestion of the Yokohama Chamber of Commerce, which has presented a memorandum calling upon the Government to dispatch industrial or technical commissioners abroad to study industry in many of the important manufacturing centres of the world. It is stated that Japan's industry is not yet satisfactorily developed and that after the war it will be backward in the industrial race unless some precautions are taken to increase the effectiveness and efficiency of manufacturing in the country. In the "Seventeenth Financial and Economic Annual of Japan" special reference is made to the trade with the South Seas and especially with China to which country she has exported large quantities of piece goods and particularly greys, in which she is predominant, and cheap poplins, which market she is endeavouring to capture. The value of this trade to Japan has recently been recognized, for the Department of Agriculture and Commerce announced that it was preparing a ruling which will compel textile manufacturers to organize an association that must exercise strict supervision over the goods woven for export. The association also must examine such goods through inspection committees, and bounties will be granted by the Government to bear part of the cost of conditioning exports.

This will mean that Japan in the future will aim at a higher standard in the cotton piecegoods trade while hitherto she has looked upon China as the dumping ground of any sort of cloth, paying little attention to quality but rather content to see the amount of her exports in this particular trade quintupled, as it has been been during the war. The Government has now come to realize, as stated in the above mentioned announcement, that to retain the markets newly gained in China, India, the Dutch East Indies, Australia and the Philippines the quality of Japanese cotton cloth must stand comparison with those of English, American and German weavers.

Japan has also increased considerably her exports to Europe and particularly to Great Britain, and in this she has been assisted greatly by the Government subsidy of shipping lines and also by the lack of tonnage available from Europe. Both America and Great Britain have been heavy purchasers of oils, as shown in statistics published under the heading of Shanghai. Oil and the raw materials necessary for the manufacture of oil are chiefly products of China. Japan purchases large quantities of oil which she forwards chiefly to Dairen in her own coasting ships and from there to Japan, where it is transported on the large steamers to Europe and America. British and American merchants, having to pay for tonnage at prices more or less controlled by their Governments, are unable to compete with the Japanese who have thus practical control of this important trade.

To realise the extent of Japan's foreign trade, and to give the foregoing more cogency, it is of interest to state that The Financial and Economic Annual of Japan, published by the Department of Finance, shows Japan's exports at the end of 1916 to have increased by 43 per cent. over the trade of last pre-war year 1913. Her imports show an increase of only three per cent. while the excess of exports over imports in 1916 showed an increase of 52 per cent. over those of 1915. In 1916 her exports were greater than in 1915 by £42,917,136.

Japan's chief items of export are cotton yarn, chiefly to China, cotton goods, raw silk, silk waste, silk manufacturers, coal, matches, copper, camphor, tea, rice, matting, earthenware, straw plait, sake, refined sugar and toys. With regard to the last named, Japan has taken the place of Germany in this market and has been a big exporter of toys to the British colonies and to some extent to Great Britain itself. Her imports chiefly consist of: rice, wheat, wheat flour, soya beans, sugar, raw cotton, cotton goods, woollen yarn, woolen goods, oil cake, petroleum, iron bar, rod and plates, engines and rolling stock. It is chiefly in the last two items that foreign countries can do the chief business with Japanese for machinery of the best type cannot be manufactured by Japan, though she is doing much in the way of equipping cotton mills, and is a great supplier to China of accessories to cotton mills. She also does a large business in the cheaper glass trade, but wise in her generation Japan has constructed quite a number of small glass blowing works, chiefly in the northern district of Shanghai, where she is turning out the cheaper quality of lamp chimneys for which there is a big demand.

From the above it will be seen that Japan has been presented with golden opportunities to establish a very firm trade throughout Asia and incidentally with Europe, and if she is unable to retain it after the war, the blame she must shoulder herself for her lack of enterprise in strengthening industries she knew to be weak and by adopting policies the strength and wisdom of which were open to doubt.

The following figures show Japan's trade during the past two years:—

VALUE OF EXPORTS.

	1916 $	1917 $
United States	169,604,040	238,550,617
Canada	5,642,043	8,054,864
Mexico	289,072	79,881
Great Britain	51,174,796	101,019,093
France	31,907,292	48,763,623
Australia	13,847,362	13,603,638

Japan's foreign trade during the first nine months of 1917 is classified as follows:—

	Exports	Imports	Total	Export (+) or import (−) excess
	(In 1,000 yen)			
January	106,241	115,704	221,946	− 9,462
February ...	131,318	126,449	257,768	+ 4,869
March	160,672	148,303	308,976	+12,369
April	157,049	162,656	319,706	− 5,607
May ...	198,606	144,225	342,832	+54,380
June	143,984	142,505	286,489	+ 1,478
July	136,033	134,050	270,084	+ 1,983
August	165,761	119,285	285,046	+46,476
September ...	185,708	133,102	318,810	+52,605

(Figures for September cover the trade done through Yokohama and 19 other ports.)

The following table shows the trade during the past eight months, January-August, of 1918 as well as of 1917, classified by countries:

	Exports		Imports	
	January-August		January	August
Asia.	1918	1917	1918	1917
	(In 1,000 yen)			
China	215,649	192,699	134,442	71,776
Kwantung	53,543	40,347	69,290	36,320
Hongkong	43,288	32,775	554	967
British Indies	121,719	58,990	213,259	134,536
Straits Settlements ...	29,866	16,093	18,489	7,623
Dutch East Indies ...	45,432	21,346	23,236	7,317
French Indo-China... ...	7,732	2,451	27,583	4,846
Russian Asia	13,174	57,100	2,554	1,814
Philippines	15,672	10,483	11,877	9,194
Siam	3,277	10,483	2,919	2,599
Other countries	100	28	102	188
Total	549,559	433,555	303,365	277,185
Europe.				
England	90,310	125,779	43,212	40,706
France	85,858	61,423	1,318	2,881
Germany	—	—	2,833	1,443
Belgium	—	—	3	13
Italy	8,524	13,412	278	194
Switzerland	334	20	1,024	2,022
Austria	—	—	1	7
Holland	—	91	837	549
Sweden	24	16	994	2,557
Norway	1	2,013	79	193
Russia	161	11,944	523	781
Spain	132	255	96	131
Denmark	—	20	33	42
Turkey	—	—	—	4
Portugal	9	29	2	2
Other countries	641	14	—	24
Total	185,997	215,021	51,240	51,534
North America.				
U. S. A.	348,861	290,600	442,212	202,002
Canada	15,733	8,920	4,594	831
Mexico	147	91	6	2
Other countries	1,526	646	3	6
Total	366,269	300,259	446,817	202,843
South America.				
Peru	1,130	410	347	988
Chili	2,729	1,277	7,098	4,958
Argentina	9,777	1,219	7,168	2,103
Brazil	169	—	39	35
Other countries	622	209	19	1,233
Total	15,473	3,287	14,674	9,310
Africa.				
Egypt	21,379	6,277	3,744	5,262
Cape of Good Hope & Natal	9,193	2,585	23,068	6,624
Other countries	792	245	544	4,054
Total	31,366	9,108	27,357	15,941
Aurtralia and other islands.				
Australia	39,600	15,256	30,582	24,399
New Zealand	4,947	2,732	6	8
Hawaii	4,632	4,698	39	223
Other islands	993	666	4,907	3,959
Total	5,173	33,352	35,534	28,590

Japan, not wealthy in natural resources, is dependent to a very large extent on the importation of steel, and greater interest in the steel question has been aroused by the ban which has been placed on the export of this commodity by Great Britain and America whose war demands have precluded them from exporting much of this valuable material. Japan's shipbuilding industry, for she now builds her own merchant vessels and war ships, and steel for her textile machinery of which she is in need of large quantities, have aroused the Government to action and they sought in China, as is well known, what they have been unable to purchase elsewhere. The total requirements of Japan at the present time, and these are growing yearly, is 2,000,000 tons of which only 600,000 are produced at home, the rest having previously come from the United States. The following figures of steel supplies in Japan for the three years, 1914, 1915 and 1916 are fairly reliable:—

	1914	1915	1916
Pig	299,139	313,558	389,347
Steel shapes and materials ...	259,423	304,304	4,699
Castings	790	1,534	4,699
Steel alloys and billets	2,223	2,253	3,817

(The above figures are in tons.)

Japan depends, as stated above, chiefly on China but recent investigations have shown that in Korea there are deposits estimated at 20,000,000 tons, which at the rate she is using on steel will be equivalent to a ten years' supply.

In respect of Japan's cotton industry and the Government desire to improve the quality, it may be of interest to state that the spinning mills of Japan since the war started have decided to increase the number of spindles by over a million, but owing to the import difficulties from Great Britain their plans have not matured to any marked extent. The high price of steel made it impossible for Japan to purchase from the United States and the idea that old spindles could be bought from the many Chinese mills came to nought for they were of too old a pattern to be of any great use. The increase of spindles up to the present instead of being over a million is only 66,296.

One of the most remarkable of Japanese industries is the extraction of fats from vegetables, the refined wax being used in the manufacture of pomades and soaps as well as leather dressings. The total value of her wax is estimated at 10,000,000 yen yearly and the value of her exports is about 1,700,000 yen.

Japan's shipping is increasing. She is building ships as fast as the exigencies of the present situation will allow, and these ships are taking more and more of the trade of China and Asia generally. In the past Japan has had to be content with old ships she has bought from foreign nations whose newer acquisitions rendered the older type obsolete and slow, but these Japan uses in her trade with China and near ports, her more up-to-date ships being utilized for the farther trade of Europe. Japan is blessed with many good harbours and though foreign vessels cannot do any coast trade, the larger steamers can call at the various ports for passengers. The total tonnage cleared from Japanese ports at the present time, when there is a scarcity of foreign shipping is over 12,000,000 yearly.

MONEY, WEIGHTS AND MEASURES.—The present monetary law of Japan came into force from October 1897, by which the gold standard was adopted. The unit of value is 0.75 gramme of pure gold and is called the yen (2s. 0½d.) which, however, is not coined. The pieces coined are as follows:—Gold coins; 20, 10 and 5 yen pieces; silver coins: 50, 20 and 10 sen pieces; nickel coin: 5 sen piece; and bronze coins. 1 sen and 5 rin pieces. The sen is a hundredth part of a yen and the rin is the tenth part of a sen. The gold coins are .900 fine and the silver coins .800 fine. The gold coins formerly issued (20, 10, 5, 2 and 1 yen pieces), are used at double their face value The one yen silver coin formerly issued is withdrawn. The old silver 5 sen and copper 2, 1, ½ sen pieces, etc., are used as formerly.

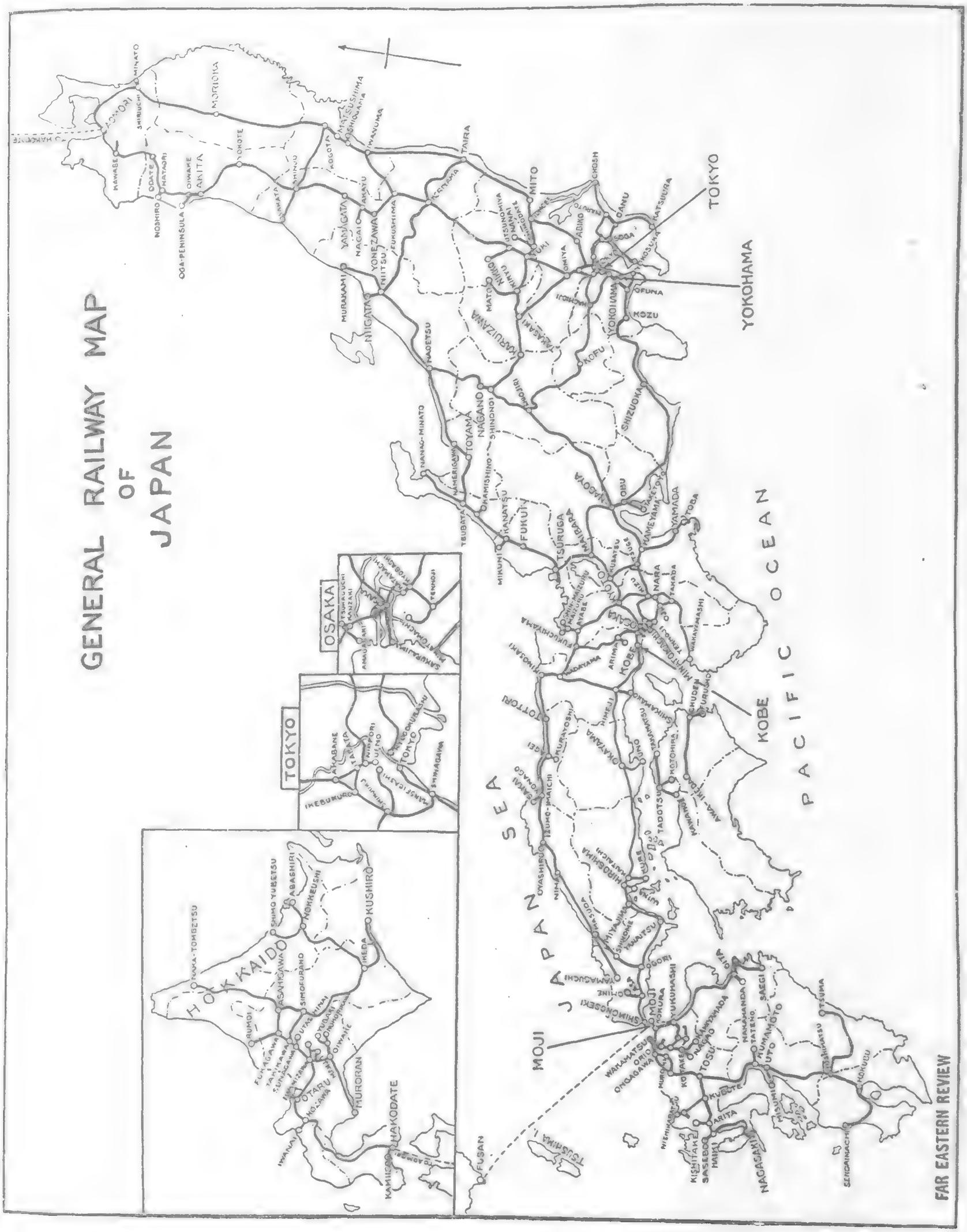
The Kin 160 momme	1.2321b. avoirdupois.
The Kwan 1,000 momme	8.2671b. avoirdupois.
The Sun	1.193 inch.
The Shaku (10 sun)	11.930 inches.
The Ken (6 shaku)	5.965 feet
The Cho (60 ken)	1/15 mile, 5.4229 chains.
The Ri (36 cho)	2.44 miles.
The Ri sq.	2.9552 sq. miles.
The Cho (land measure)	2.45 acres.
The Koku (liquid)	39.7033 gallons.
The Koku (dry)	4.9629 bushels.
The To (dry)	3.9703 gallons.
The To (liquid)	1.9851 peck.

Besides, a system of weights and measures based on the metric system is acknowledged as legal in the following ratios:—

Metre	3.3 shaku
Gramme	0.26667 momme (4/15 momme)

The following table gives the foreign trade of Japan as a whole for the years 1888, 1898, and yearly from 1908 to the date of the latest available statistics:—

Year	Commodities		Total
	Exports	Imports	
	yen	*yen*	*yen*
1888	65,705,510.21	65,455,234.01	131,160,744.22
1898	165,753,752.88	277,502,156.51	443,255,909.39
1908	378,245,673.00	436,257,462.00	814,503,135.00
1909	413,112,511.00	394,198,843.00	807,311,354.00
1910	458,428,996.00	464,233,808.00	922,662,804.00
1911	447,433,888.00	513,805,705.00	961,239,593.00
1912	526,981,842.00	618,992,277.00	1,145,974,119.00
1913	632,460,213.00	729,431,644.00	1,361,891,857.00
1914	591,101,461.00	595,735,725.00	1,186,837,186.00
1915	708,306,997.00	532,449,938.00	1,240,756,935.00
1916	1,127,468,118.00	756,427,910.00	1,883,896,028.00
1917	1,603,005,048.00	1,035,811,109.00	2,638,816,155.00
1918 ended August ...	1,198,838,505.00	1,093,206,738.00	2,292,045,678.00


GENERAL RAILWAY MAP OF JAPAN
TOKYO
YOKOHAMA
KOBE
OSAKA
HOKKAIDO
MOJI
FUSAN
TSUSHIMA
JAPAN SEA
PACIFIC OCEAN
FAR EASTERN REVIEW

Year	Specie and Bullion	
	Exports	Imports
	yen	*yen*
1888	7,833,444.06	8,732,491.57
1898	86,987,480.63	42,563,781.12
1908	3,772,502.00	17,544,486.00
1909	6,584,327.00	79,587,502.00
1910	25,175,091.09	17,671,797.00
1911	24,398,286.00	6,168,268.00
1912	28,352,153.00	11,544,351.00
1913	27,093,346.00	1,021,351.00
1914	29,649,935.00	9,107,071.00
1915	44,566,024.00	24,296,518.00
1916	28,079,418.00	101,029,901.00
1917	153,736,340.00	392,224,967.00
1918 ended August	112,000.00	1,820,971.00

The export trade of Japan has increased about 130 per cent. in three years, from gold $354,000,000 in 1915 to $802,000,000 in 1917. The total increase is $448,000,000, of which $412,000,000 represents increases in partly or wholly manufactured articles. The question which concerns the traders in the Ear East is whether or nor the industries which have been created and enlarged to care for this enormous increase are of such a character and so well founded as to withstand the strong competition which it is certain they must confront hereafter.

The following figures have been compiled for the purpose of facilitating an analysis of the situation which has arisen in Japan during the war, and may prove of interest to merchants in the Far East.

The goods making up the increases are divided into two classes, with the proportion of each in the figure of $412,000,000 shown separately:—

Kind of Goods.	Increase.
CLASS I.	
Silk yarns, thread, and materials	$110,000,000
Ores and metals	53,000,000
Silk tissues	10,000,000
Oil, fats, waxes, and manufactures thereof	9,000,000
Potteries and glass	8,000,000
Paper and paper manufactures	8,000,000
Sugar and confectioneries	8,000,000
Total	206,000,000

Kind of Goods.	Increase.
CLASS II.	
Vessels, vehicles, machinery, etc.	$54,000,000
Cotton tissues	44,000,000
Cotton yarns, threads, cordages, and materials	25,000,000
Drugs, chemicals, medicines, and explosives	18,000,000
Clothing and accessories	14,000,000
Metal manufactures	11,000,000
Woolen and other manufactures	5,000,000
All other wholly or partly manufactured goods	35,000,000
Total	206,000,000
Grand total	412,000,000

The articles in the first class are manufactures of raw materials peculiar to Japan and in which Japan should naturally be expected to excel in cheap and increasing production. The goods in the other class, whose increase, it will be noted, is exactly the same as the goods in the first class, are such manufactures that must rely on imported raw materials and in which Japan will be most likely to meet the greatest competition hereafter.

The sale of steamships at enhanced prices accounts for $48,000,000 of the increase, a condition resulting entirely from the exigencies of war.

Next in importance is the increase of $44,000,000 in cotton tissues, of which $26,800,000 (about 60 per cent.) went to China. Other territories sharing the increase were: India, 10 per cent.; Japanese leased territory in Manchuria 4 per cent.; Dutch East Indies, 4 per cent.; Asiatic Russia, 3 per cent., Straits Settlements, 2 per cent.; and the United States, 1 per cent. The remaining 16 per cent. was divided between Australia and South America.

Increased exports of cotton yarn, thread, rope, twine and cordage generally account for $25,000,000 of the general increase between 1915 and 1917, and of this sum exports to China account for 64 per cent. of the total, or $16,200,000.

In the same period, the increase of $18,000,000 listed as drugs, chemicals, medicines and explosives, includes such important articles as safety matches ($4,400,000), sulphur ($1,800,000), acetic acid, chlorate of potash and camphor. India, Australia, the United States and the East Indies are Japan's best customers for these goods.

The next item in the list, clothing and accessories, accounts for $14,000,000 of the increase. It includes cotton underwear ($3,000,000), knit gloves ($2,200,000), socks and stockings ($1,700,000), metal buttons ($1,700,000) and shell buttons ($46,200,000) as the most important items. The largest increases in exports of cotton underwear were in the amounts taken by British India with 26 per cent. of the total; China and Cape Colony with 16 per cent. each; Australia with 6 per cent.; Dutch India with 3 per cent.; while the remaining 33 per cent. is scattered over other parts of the world. Exports to Great Britain accounted for the whole increase in knit gloves, while 50 per cent. of the increase in socks and stockings went to China, 10 per cent. to India, 8 per cent. to Siberia, and 32 per cent. to other countries. The export of metal buttons shows the most marvellous increase, as the exports in 1915 were only $35,000; practically the entire increase of $1,700,000 is new business which formerly went to Germany. The United States took 60 per cent. of the increase in shell buttons. In practically all the other items (such things as bracelets, ankle bands used by Chinese for binding the loose ends of their trouser legs. sandals, jewelry, caps, hats, slippers, bone buttons, straw hats, etc.), China, India and the Indies account for the increases. In the field under the general heading Japan has a rare opportunity, as not only have the war requirements of other manufacturing nations taxed their capacities, but the only serious competitor of Japan in many items is Germany.

Of the next item, $1,400,000 represents increase in wool and cotton blankets. China was the best customer for blankets, while the United States took the larger part of the other goods showing increases—such items as carpets, towels, doilies, knitted tissues, tablecloths and drawn work, etc.

Of the classification of metal manufactures, totalling $11,000,000, the biggest item is iron manufactures, valued at $5,000,000, with other large items in their order of importance as: brass manufactures $3,100,000; enameled ironware, $3,100,000; insulated electrical wire $1,200,000. Of the increase in iron manufactures, 30 per cent. was taken by China, 26 per cent. by Southern Manchuria, 16 per cent. by British India, 10 per cent. by Siberia, and 18 per cent. by other countries. The entire increase in brass manufactures went to Siberia. China took 30 per cent. of the increase in enameled ironware; India, 30 per cent.; Philippine Islands, 10 per cent.; Hongkong, 10 per cent.; and other countries, 20 per cent. Of the insulated-wire increases China took 30 per cent.; India, 20 per cent.; South Manchuria, 17 per cent.; Dutch India, 7 per cent.; and all others, 26 per cent

Introducing the Budget in the House of Representatives at Tokyo on January 21, Baron Takahashi summed up the economic situation of Japan during the period of the war as follows:

In four years the capital invested in industries had grown by Yen 5,000 million, nearly half of which had been actually paid up; the deposits in the Banks had risen from Yen 2,600 million to Yen 6,290 million; the deposits in the Post Office Savings Banks from Yen 200 million to Yen 550 million; exports to 5,610 million and imports to 4,150 million; other receipts abroad total 1,320 million; the national credit abroad had reached 2,780 million, and the reserve of the Bank of Japan, which before the war amounted to 350 million had been increased to Yen 1,580 million.

Yokohama

The port of Yokohama was first opened to foreign trade in 1860. From a small fishing village which stood there, Yokohama within a half century has become a great city of half a million population, next in importance to the three great cities of Japan, Tokyo, Osaka and Kyoto. This was almost altogether due to the rapid development of Japan's foreign trade along with the growth of Japan as a world power. The statistics below are mostly based on pre-war returns.

In 1913, the number of vessels entering the port of Yokohama was 3,200, with a total tonnage of 16,000,000; the number of departures 3,300, with tonnage of 17,000,000; the total amount of trade through the port was Yen 550,000,000, of which Yen 310,000,000 was exports and Yen 230,000,000 imports. The follow



NEW WHARFAGE ACCOMMODATION AT YOKOHAMA

ing is a table of trade returns of Yokohama and Japan in selected years:—

Year.	Exports of Yokohama.	Imports of Yokohama.	Total Trade of Yokohama.	Japan's Trade.
1868	13,307,201	7,684,033	20,991,234	26,246,545
1877	15,916,368	21,028,787	36,945,155	50,769,425
1887	33,775,222	27,174,928	60,950,150	96,711,933
1897	90,700,985	86,836,855	77,537,040	382,435,849
1907	205,888,534	172,485,633	378,374,167	926,880,219
1913	316,821.454	235,102,028	551,023,482	1,361,891,857
1917	667,065,145	287,267,699	954,332,844	2,638,816,155

The chief article of export from Yokohama has been raw silk, which 1913 amounted to 20,223,179 *kin* (*kin* equals 1.322-lbs. avoir.), valued at Yen 190,893,942. Raw silk is exported chiefly to the United States, followed by France, Italy and Russia.

Exports of habutae silk fabrics manufactured in Fukui, Ishikawa, Fukushima, Toyama, Nagano, Gumma and other prefectures north and northeast of Yokohama amounted in 1913 to 2,703,981 *kin*, valued at Yen 34,107,876, to France, British India, England, the United States and Germany, while recently the demand for it in Australasia has been increasing rapidly.

The export of hemp braids, chiefly manufactured in Yokohama, amounted in 1913 to 14,978,397 bundles, valued at Yen 6,565,714, to England, America, Germany, France and other countries.

Cotton fabrics exported through the port amounted in 1913 to 4,128,872 *kin*, valued at Yen 3,120,018, to China, Hongkong, the Philippines, etc.

Silk handkerchiefs amounting to 1,641,369 dozens, valued at Yen 4,812,793, were exported to Europe and America.

Cotton crepes exports amounted to 8,370,262 yards, valued at Yen 3,142,061, to Australia, the United States, the Philippines and other South Sea Islands.

Copper exports to the United States, England, France, etc., amounted to 24,951,910 *kin*, valued at Yen 10,227,929.

Tea, manufactured chiefly in Shizuoka and Miye prefectures, followed by Gifu, Hyogo, Tokyo, Saitama, Kyoto, Osaka, Ibaraki, Aichi, Oita, etc., exported through this port amounted to 4,683,637 *kin*, value Yen 2,279,405, to the United States, and also to Canada and Straits Settlements.

Exports of sea products from Hokkaido, Hokurikudo, Chiba and Ibaraki prefectures, such as dried fish of various descriptions, seaweed, etc., amounted to 12,712,944 *kin*, valued at Yen 2,510,636, to Hongkong and China, followed by the United States, Straits Settlements, etc.

The chief articles of import through the port of Yokohama in the same year, 1913, were: raw cotton, Yen 30,198,192; sugar, Yen 17,891,381; rice, Yen 14,112,153; oil cakes, Yen 13,417,930; machinery, Yen 796,926; wool, Yen 11,416,460; bar iron, Yen 5,973,106; wheat, Yen 5,815,984.

The detailed figures of imports and exports during 1916 are as below:—

IMPORTS.

	Yen		Yen
Cotton, Yarns	56,143,349	Sugar and Sweetmeats ...	4,252,565
Iron and Steel	33,995,959	Ores and Minerals ..	4,046,028
Drugs and Medicines...	21,243,074	Grains and Seeds... ...	3,953,043
Bean-cake, Manure ...	12,507,833	Woollen Tissues	2,894,263
Copper, Lead, Zinc, etc.	8,853,512	Dyes and Paints	2,243,471
Vehicles, Clocks, Watches, etc.	7,284,778	Cotton Manufactures ...	1,745,293
Paper and Paper Manufactures	7,130,423	Beverages and Comestibles	1,594,184
Machinery	6.116,187	Copra	1,279,534
Oils, Fats and Waxes ...	5,468,555	Potteries and Glass M'ftrs	1,107,653
Metal Manufactures ...	4.992,396	Sundries	10,439,455
Skin, Hairs, Bones, etc.	4,463,823	Total Imports ... Yen	209,737,683

The values of the principal articles of export in the same year were as follows:—

EXPORTS.

	Yen		Yen
Silk (Raw and Waste) ...	271,813,540	Cotton, Tissues	5,005,917
Silk Manufactures ...	47,340,987	Toys	4,045,984
Metals & Metal Manuftrs.	39,061,457	Sugar & Confectioneries	3,991,536
Grains, Flours, Seeds ...	12,500,693	Paper & Paper Manuftrs.	3,977,805
Clothing and Accessories.	11,200,399	Oils, Fats, Wax, etc. ...	3,549,873
Cotton Manufactures ...	10,174,010	Tea	2,676,959
Drugs, Medicines, etc. ...	8,696,310	Marine Products	2,631,213
Braids of Hemp	8,599,183	Potteries & Glass M'fters	1,870,598
Beverages, and Comestibles	7,726,392	Skins, Hairs, Horns, etc.	1,070,467
Clocks, Scientific Insts, etc.	5,486,496	Sundries	40,812,021
Cotton, Yarns	5,421,313	Total Exports ... Yen	497,653,158

The foregoing figures represent the total imports and exports of both foreign and native goods.

The Yokohama Board of Trade was established in March, 1910, with a capital of Yen 2,000,000, to handle silk thread, shares, rice and other grains, tea, sugar, sea products, etc. But only raw silk, shares, rice and grains are being dealt with. Of these three, the most important is raw silk. The official prices of silk fixed by the board reflect the prices on European and American markets. The amounts of the three articles dealt with in a recent year were as follows:—

Raw Silk:	Bought and quantity sold ...	2,986,750 kin
	Quantity handled	81,500 kin
Shares:	Number bought and sold ...	40,953
	Number handled	7,185
Rice and Grains:	Quantity bought and sold ...	476,620 koku

The Yokohama Chamber of Commerce was established in December, 1895. It claims to have done much in co-operation with six other big chambers in Japan toward improving commercial opportunities for Japanese and foreigners and cementing closer relationships with foreign countries. There are 28 unions of associations of traders in Yokohama and within the jurisdiction of Kanagawa Prefecture, of which 23 are related with traders in export articles. There are various industrial unions within the prefecture of Kanagawa, numbering about 110, which are improving their opportunity to be useful with the encouragement of the Government.

HARBOR.—The Harbor of Yokohama extends from Hommoku in the south to the eastern bank of the Tsurumi River in the north for a width of 4 nautical miles, indenting westward for about 2½ miles toward the city of Yokohama. Within this harbor have been constructed two lines of breakwater, the work for which was commenced in 1889 and completed in 1896, thereby forming the commercial port of Yokohama. The north breakwater measures 6,700 feet, running southeastward; and the east breakwater 5,380 feet, running northeastward. Between the two breakwaters there is an opening measuring 800 feet in width, with a depth of 33 feet at lowest spring tide. In order to prevent the small creek which empties into the port from filling up the harbor, a parallel breakwater was built to the northern breakwater measuring 6,090 feet and giving a width of 70 feet to the stream, enough for the passage of sampans. The area of the port where ships can anchor measures 1,237.8 acres. In respect of area, the port of Yokohama does not stand behind leading ports in Europe and America.

Dredging has been carried on since 1891, on the principle of providing harborage to big ships because of the constant development of world ocean transportation. At the end of November, 1914, the depth of the port measured as follows:

Dredged Depth:	Area:
35-ft.	51,400 tsubo
33- ,, ...	216,030 ,,
32- ,, ...	650 ,,
30- ,, ...	118,280 ,,
28- ,, ...	272,512 ,,
24- ,, ...	157,316 ,,
20- ,, ...	142,707 ,,
Total	958,895 ,,

50,000 odd *tsubo* of the area of the depth of 35 feet not being sufficient, the second period of dredging plan was inaugurated in 1914, by which an area 1,047,000 *tsubo* has been divided into three depths, 35 feet, 30 feet, and 24 feet. It is expected that the work will be completed in 1927. When completed the result will be as follows:—

Depth:	Area:
35-ft.	493,769 tsubo
30- ,, ...	353,247 ,,
24- ,, ...	200,513 ,,
Total	1,047,529 ,,

The remaining area is either to be devoted to anchorages, wharves and piers, or reclaimed, as suits the later requirements of the port.

WHARVES AND PIERS.—Thirteen years ago, there was practically nothing but a pier in way of modern landing facilities, so that the ever-increasing cargo which could not be accommodated there had to be landed by means of sampans. But to-day there are wharves built along about 70,000 *tsubo* of reclaimed ground in front of the customs house of the port. The

wharves have been built on the level with the reclaimed ground, 12.5 *shaku* (*shaku* equals 1.930 ft.) above water at low tide, for the purpose of accommodating ocean-going liners. Except immediately adjoining the stone walls, the depth of the water alongside is maintained at 20 to 30 *shaku* below the surface of water. The total length of the wharves measures 1,131.2 *ken* (*ken* equals 1.988 yards). The following table gives a general idea of the capacity of the wharves:—

Depth of water along Wharves.	Extended Length.	Available Length.	Type of Ships to be Anchored.	Number of Ships.
32 shaku	127 ken	107 ken	Tenyo Maru	1
28 ,,	627 ,,	527 ,,	Kamo ,,	6
24 ,,	165 ,,	160 ,,	Yawata ,,	3
20 ,,	181.1 ,,	157 ,,	Hakuai ,,	3
16 ,,	8.6 ,,	—	—	—
11.5 ,,	22.5 ,,	—	—	—
	Total 1,131.2 ken.			

Besides the foregoing there is a landing accommodation extending 251.5 *ken*, between the reclaimed ground and the city streets of Yokohama for cargo carried by sampans. There is also a landing accommodation of 280 *ken* within the former customs house premises.

The so-called customs house pier which was built at an early period of the port's history had become out of date, so it was decided to rebuild it in 1911 and the work was completed, according to the original plan, in 1916. The plan under which it was rebuilt made the depth of water on both sides at low tide 35 feet, the length of the pier 202 *ken*, and the width to 23 feet. The part of the pier leading to the land was improved to a length of 70 feet and 62.5 feet width. At the connecting point between the pier and land a reclamation of ground 76 feet long by 36 feet wide was made, and also in front of the customs house inspection department offices a reclamation of 12 *ken*, to accommodate launches and sampans in loading and unloading cargo, was effected. Upon the pier have been erected two wooden structures, 10 *ken* wide and 55 *ken* long, for keeping cargo temporarily. One of them has an upper apartment, where passengers are accommodated.

In case ships do not make use of the wharves or the pier, they will find it safe to anchor in the middle of the harbor by relying upon the buoys located here and there, numbering 25. 22 of these buoys belong to the port control bureau and are available for ordinary ships. Two belong to the Yokohama Dock Company, and the remaining one which is located outside the breakwater belongs to the Rising Sun Petroleum Company for the convenience of oil ships.

The hauling facilities on the wharves and the pier are controlled by the customs service, and they are available only to ocean-going ships. Facilities for coast trade vessels have not yet been completed, the cargo from coast trade vessels being handled by means of sampans. This service is rendered almost everywhere in the port or in the canals of the city, for instance with the coaling place of the Mitsui Company, the warehouse of the Yokohama Dock Company, the receiving place of the Imperial Railway Board, etc.

Arrangements on land worth mentioning are those within the premises of the customs service. In the customs service ground there is a land space of 14,360 *tsubo* (*tsubo* equals 0.000816 acre), on which stand various customs service buildings, covering 2.800 *tsubo* and tax collecting and warehouse sheds covering 1,850 *tsubo*. There are 6 cranes and 4,800 *ken* (*ken* equals 1.988 yards, about 6 feet) of railway within the premises. The new customs service premises have 69,700 *tsubo* of reclaimed ground, upon which various descriptions of new port facilities are arranged to make handling of cargo convenient. There are 3 wooden sheds and 11 steel frame sheds, covering in all a space of 12,724 *tsubo*. The first and second sheds are located along the landing for sampans, the third to fourteenth about 5 to 6 *ken* from the water front of the wharves, standing parallel with the water front.

The following figures will give an idea of how the facilities described above have been utilized. In 1914, 295,456 tons of cargo passed through the sheds on the wharves, exports and imports put together; 74,654 tons passed through the landing for sampans. Further, in that year, 370,302 tons of cargo passed through the new port, of which 80,085 tons was carried to and from the wharves by rail, 219,894 tons by horses and wagons, and 70,120 tons by water (that is through canals).

There are two warehouses belonging to the customs service, built of bricks, three stories high, thatched with tiles. They are 12 *ken* wide, 81.5 *ken* long, and 34.9 *shaku* (*shaku* equals 11.930 inches) high. The area is respectively 3,387 and 3,249.36 *tsubo*. Inside the two warehouses are located 4 cranes operated with electricity. Three winches are attached to the first warehouse steel addition and two to the second, to which are added the further conveniences of light railways, electric lights and 3,000 feet of emergency water pipes.

The strictly foreign imports in 1917 amounted to Gold $143,634,000 and the exports to $333,532,000. The figures in 1916 were $104,869,000 and $248,827,000 respectively.

There are in all 20 cranes located along the water front of the wharves, stationary and moveable; one stationary crane for 50 tons weight, another for 20 tons, 6 moveable cranes for 5 tons and 12 for 1.5 tons. The stationary crane for 20 tons, which was intended for sampans, is operated with steam and the others with electricity. The 50-ton stationary crane is located in the eastern part of the left projection, where the depth of water is 28 *shaku* and the height of the wall from water surface to the surface of the rails 86 *shaku*. The arms of the cranes are 25 feet in the case of the smaller ones and 60 feet in the larger, the latter of which can lift 50 tons. The moveable cranes are those employed for wharves and are placed on a two-legged wheel base, moving about on tracks of 13′ 6″ gauge. Freight cars and locomotives going back and forth on the rail tracks laid inside the crane rails can freely pass underneath the cranes.

There are 2 electrically handled capstans for 10 tons and 15 for 1 ton, totalling 17. The ten-ton capstans assist ships in anchoring by pulling the cables, while the one-ton capstans are used for handling railway freight cars.

While cargo carried by rail in and out of the customs house premises is much smaller than that carried by horses and wagons and also by sampans, a railway system has been established with future developments in view. Four side-tracks have been laid on the wharves. The main line leads from the land-and-water connecting line laid by the Imperial Government Railway Board which has been extended into the premises of the customs house. Branch lines have been laid to each of the warehouses and to the water front of the wharves. The entire length of rails measures 9 miles 91 links.

The railways which are extended into the new and old customs premises are linked with the connection line of the Imperial Government Railways and lead to the railway premises of the East Yokohama Station, and the cars carried thereon are distributed in that station to be sent in different directions on the Tokaido line.

There is an electric generating station within the premises, where electricity to be used for lights and power to move cranes is generated, with a capacity of 680 kilowatts.

The canals and rivers which are connected with the port are constantly being dredged. There are three rivers, or more properly speaking creeks, which run from a short distance back of Yokohama and through the city. These creeks are connected by canals here and there in the city. All these creeks are shallow and are serviceable only for canal boats.

DOCKS.—There are two dockyard companies in Yokohama, the Yokohama Dockyard and the Watanabe Dockyard. The Yokohama Dockyard Company has two docks for repairing vessels for ocean traffic and coastwise trade. The Watanabe Dockyard Company is much smaller in scale, so that their dock cannot repair ocean liners. The sizes of the docks are as follow:

Kind of construction.	Length		Width		Width of Entrance		Depth	
	Upper	Lower.	Upper	Lower.	Upper	Lower.	High tide	Low tide.
Stone...	422.07	377.10	90.00	48.00	61.00	46.03	27.00	19.06
Stone and Concrete	491.00	481.08	86.83	83.63	66.83	63.63	25.96	19.96
Stone...	238.00	227.00	53.00	42.83	42.50	35.33	18.00	13.00

PORT CHARGES.—*Use of Wharves.*—Persons who use wharves for anchorage are charged at the rate of two sen per registered ton up to 24 hours, 3 sen for more than 24 hours, and 1 sen extra per 24 hours when anchoring more than 96 hours. Persons who use piers are charged at the rate of 2 sen per ton per 24 hours, and one-half that for each extra 24 hours. *Use of Buoys*—Yen 7 per 24 hours.

The rate of charges by sampan operators varies so widely that a fixed rate cannot be stated. But on the average, for example, 10,000 *kin* (*kin* equals 1.322 pounds) pays Yen 2 in the case of grains, Yen 2.20 in the case of iron or steel, Yen 2.10 to 2.20 in the case of fertilizer, for a movement between Yokohama and Tokyo. Between Tokyo and Yokohama the charge is Yen 3.50 for pulling one sampan; inside the port, 50 sen for one sampan.

Wages.—For hauling cargo out of the port, 16 sen per ton; for landing cargo, 16 sen per ton. These charges are subject to change according to fluctuations from time to time.

CUSTOMS HOUSE BROKERS.—There are about 23 persons or firms engaged in the customs house brokerage business. These houses usually do everything necessary in way of routine work

of exportation or importation, especially for manufacturers who do not know the ways of the customs house routine service.

While arrangements in the customs house premises have been perfected, as explained in the foregoing paragraphs, cargo is chiefly carried by means of sampans, especially as the traffic is principally between Yokohama and Tokyo. The number of sampans at the end of December, 1914, was 465 for passengers and 2,191 for freights, operated by 558 persons or firms. These sampans carry 40 or 50 tons, or even more. In 1914 there were 14 different persons and firms engaged in operating tug boats, the number of such boats being 26.

Osaka

Osaka, in lat. 34 deg. 41 m. N., long, 135 deg. 31 m. E., is the second largest city in Japan. In respect of its commercial and industrial activity, the density of its population, its general prosperity, and especially the growth and expansion of its



AJIKAWA (RIVER) OSAKA

foreign trade, Osaka even excels the largest city. The city is linked by railway and electric lines with all parts of Japan. Working in conjunction with Kobe, the busiest import port of Japan, which is some 20 miles to the west, Osaka carries on an extensive foreign trade. In fact, the port is the commercial and industrial centre of the empire. The city is on the sea and is traversed by rivers and canals in all directions which afford unique facilities for boat transport. The people of Osaka were the first to have recourse to Occidental methods in the development of their industries, and the history of the last few years, as a result, is one of continual progress and activity. The municipality has dredged the waterways leading into the city, built a sewerage system, and is working on a scheme established in 1897 for making the harbor one of the first order.

The population of the city is 1,557,986. The 1917 statistics show that the city has 2,838 buildings of three stories or more, which gives a fair idea of the amount of construction in foreign style which has gone on now within the past few years. Thirty banks have deposits totalling 13 billion yen.

Osaka is the premier industrial city. Practically three-fourths of the Japanese spindles and looms now operating or being constructed are in or about the port. For its position in the cotton trade Osaka is known as "The Manchester of Japan."

Osaka contains not only the largest number of spindles but is the centre for the buying and selling of cotton, cotton yarn, and cotton cloth; it is the headquarters of the largest dealers, of the Three-Products Exchange, and of the Japan Cotton Spinners' Association. Some of the products are exports through Osaka and some through Kobe, which lies but 20 miles distant. The total number of spindles in Japan in 1913 was 2,176,748 and of looms 21,898 in the mills in the Japan Cotton Spinners' Association, the largest mill in the list having 378,764 spindles and 4,139 looms (although another mill has 5,312 looms and 273,484 spindles), and the smallest 1,704 spindles.

The number of industries is estimated at 10,000, although it will be understood that most of these are on the small scale which is typical of Japanese manufacture.

The new harbor consists of an inner and an outer basin, the outer basin being protected from the sea by two large breakwaters. The north breakwater starts from the right bank of the Ajikawa and runs in a southwesterly direction into the sea for 1.7 miles; the south breakwater starts from the mouth of a small stream which lies next to the Ajikawa and runs for 840 yards in a northwesterly direction and then extends to the southwest for 2.1 miles. The two breakwaters approach each other at the outer ends, leaving a passage 200 yards wide and 28 feet deep at low tide. The inner basin is protected by a breakwater which starts from the right bank at the mouth of the Kizugawa and, running in a northwesterly direction for 1,820 yards meets with the south breakwater of the outer basin. From the space thus enclosed 1,217 acres of the foreshore have been reclaimed, and docks and wharves will be built on the made ground. The harbor, which is about 2 miles long and ¾ mile wide, has been dredged to a depth of 27 feet. Inside the harbor is an iron pier, 1,500 feet long and 100 feet wide. Some quays and warehouses have been completed, but in general vessels still discharge cargo into lighters which convey it to the wharves on the river.

Although Osaka is of less importance as a port than Kobe, its foreign trade grew very greatly in 1917. Its imports increased from about Gold $41,000,000 to $47,000.000, or 15 per cent., and its exports from $71,000,000 to $128,000,000, or 80 per cent., as compared with 1916.

Miike

The Miike harbor is a private undertaking of the Mitsui Mining Company, designed chiefly for facilitating the export of coal from the Miike colliery. It lies in lat. 33 deg. N., long. 130 deg. 23 min. E. Miike does a fair trade with China, but until recently the port did not play a very important part in Japan's trade. The improvement of the harbor, however, has led to an increased business. The Miike harbor comprises the water area within the arc of a circle drawn with the lighthouse on the extreme point of the north jetty as centre, the circle having a radius of one-and-a-half nautical miles, and may be divided into three sections—the outer harbor, the inner harbor and passage, and the wet dock. The outer harbor is the water area within the harbor limits exclusive of the inner harbor and the dock.

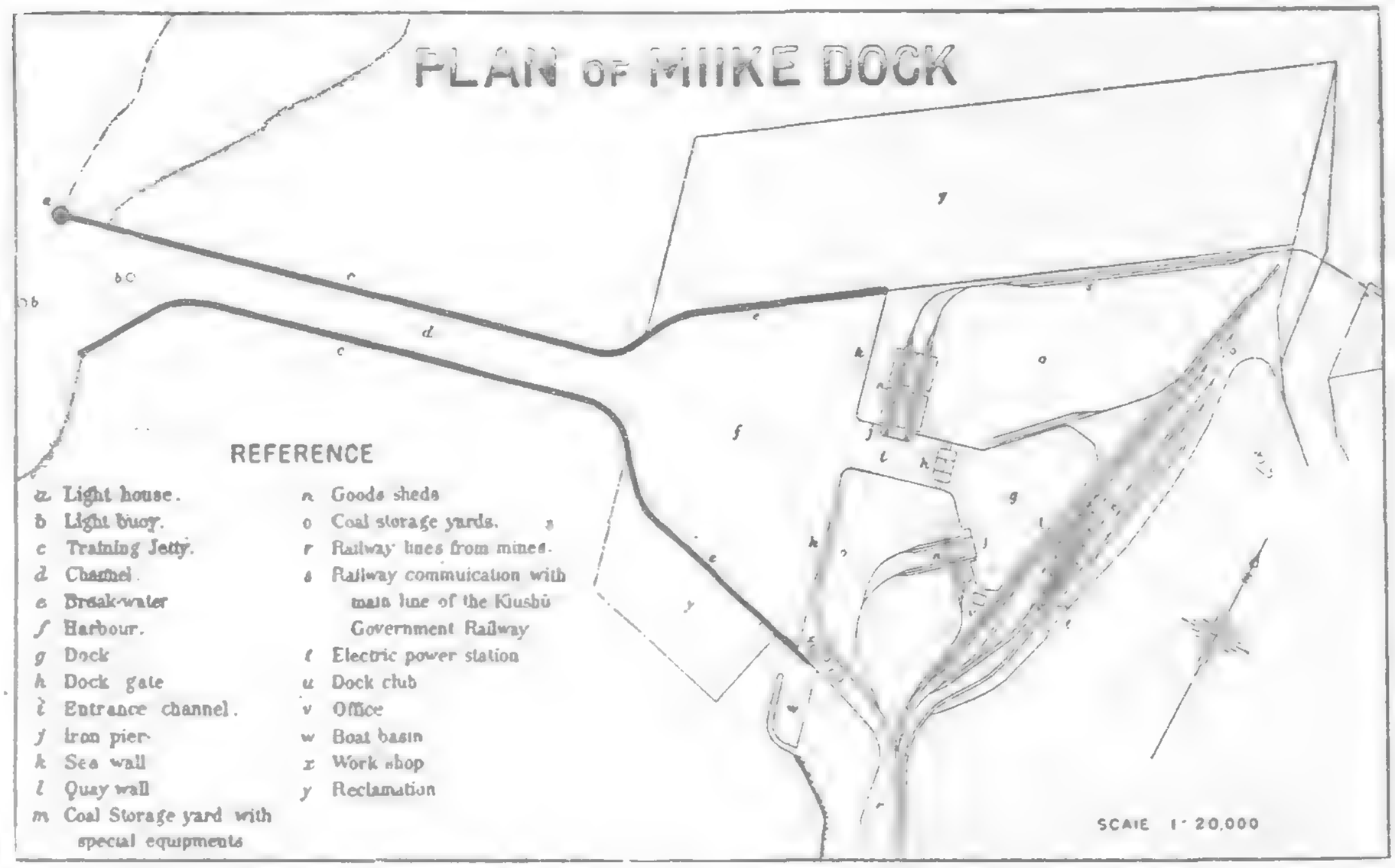
The inner harbor, bounded by the breakwaters and seawall of the dockyard, has a total area of about 124 acres. A channel across the central part of the harbor and some anchorage space has already been dredged out, but the deepening of the remaining sections is to be undertaken in due course. When the entire dredging is completed, the portion to the north of the channel will be appropriated exclusively for the use of the public.

The two breakwaters bounding the inner harbor, each about 3,000 feet, are of the rubble mound type, and the top of the wall is three feet above high water level and the width is 15 feet.

The channel, 6,000 feet long extending from the inner harbor to the sea, has a minimum depth of 18 feet at the lowest low-water level. It is protected from the waves and intrusion of silt by means of two parallel jetties. These jetties are similar in structure to that of the breakwaters having a height of one foot above high water level and a breadth of 12 feet. The distance between the two jetties, measuring from centre to centre, is 450 feet. A water course, 150 feet wide at the bottom and 18 feet deep at the lowest low water, is already dredged out, and to cope with increase in shipping traffic in the future, it may be widened out to about 250 feet, so as to enable vessels to pass each other.

The wet dock is under the exclusive control of the firm of Mitsui and will be used principally for coal loading. It has a surface area of 32 acres at high water level and the depth of water is constantly kept not less than 28 feet by means of lock gates, being capable of accommodating eight or nine vessels at the same time.

The quay wall, which is 1,300 feet long, 41 feet 6 inches high, and 30 feet deep at normal level, having a batter of 1/20 in the front side, is situated at the eastern extremity of the dock and is sufficiently large for the simultaneous accommodation of three vessels of big dimensions. This quay wall can be extended considerably in future. On the quay wall are to be installed several sets of "Miike" loading machinery designed to move laterally along the wall to provide a loading capacity of upwards of 10,000 tons of coal per diem, which is about double the present output of the Miike coal mines.



The dock gates, being a controller of the water level in the dock, forms the most important part of the works. The width of passage is 66 feet, and it has a depth of 28 feet on the sill at the normal level in which the gates work. The gate weighs 90 tons each, and is worked by means of hydraulic power.

An iron pier, 300 feet long and 75 feet wide, is constructed along the southern side of the dock for the accommodation of vessels carrying general cargo.

Coal storage yards are amply provided adjoining the quay wall. The one at the back of the wall has a special equipment, consisting of five rows of trestles built upon brick arches, underneath of which electric railway tracks are laid for the transport of coal from the storage pile above. By opening doors on either shoulder of each brick tunnel above which the coal is stored, the coal gravitates into wagons placed on the track. A train consisting of five or six wagons is drawn by an electric locomotive and the contents are dumped into the tipple of the loading machinery. The empty wagons are devised to run down to the lower level siding and are returned to the tunnel to receive fresh supply. These specially equipped piers have an aggregate storage capacity of about 50,000 tons, and are to be used chiefly for lump coal. For storage of the bulk of the dust coal, ordinary trestles are to be provided.

A system of railway tracks is in direct connection with the rest of the Miike mines. A railway connection with the main line of the Kyushu railway is to be secured in the near future to accommodate for the growing trade.

On the quay wall a fresh water main will be furnished to supply fresh water for drinking as well as for feed water purposes.

DUES AND RATES.—Article I.—Every vessel entering or leaving the harbor shall be charged harbor dues both on arrival and departure.

Article II.—The harbor dues on all vessels, whether steamers or sailing vessels, shall be charged both on arrival and departure at the following rates:—

(1) Every vessel carrying a cargo on board, at the rate of 20 sen per ton on the cargo of the vessel.

(2) Every vessel in ballast, every vessel leaving the harbor without loading or discharging, or every vessel calling at the harbor for shelter and protection owing to a distress at sea; at the rate of six sen per ton on the registered tonnage of the vessel.

(3) Steam launches, at the rate of three sen per ton on the registered tonnage.

Under no circumstances, the harbor dues on a vessel shall be less than those on the same vessel when she is in ballast.

Article III.—Every vessel at anchor, when exceeding the time limit assigned for loading and discharging specified elsewhere, shall be charged a detention fee.

The detention fee shall be at the rate of two sen per ton per 24 hours on the registered tonnage of the vessel.

Kobe

Kobe is now the foremost port on the Pacific, East or West, in the point of trade with foreign countries. The increase of imports at Kobe in 1917, as compared with 1916, was 42 per cent, while exports increased 45 per cent. The imports exceed the exports, the imports in 1917 amounting to Y.530,929,041, while the exports amounted to Y.479,770,388. Kobe has become the port for the large manufacturing cities of Osaka, Kyoto and Nagoya, for whose factories raw materials are imported from every part of the world. The imports at Kobe, therefore, consist chiefly of raw and semi-manufactured goods, for further use in manufacturing, and the exports consist principally of finished articles and natural produce.

Kobe is the greatest transhipping port of the Far East, due to the fact that many of the Japanese steamship lines running to China, India, the South Seas, Korea, etc., have their termini at Kobe, where the goods which they bring are transhipped to vessels running to Europe and America. Its safe anchorage in a fine harbor soon made it a place of importance until it has grown today to be the most important of Japan's ports. Those who had established themselves in Yokohama at the beginning of the latter half of last century doubted whether Kobe would prove the success as a port that had been prophesied, but it so developed that large extensions were necessary in the harbor, and wharves and docks were constructed. The scheme for these improvements was sanctioned by the Government in 1906 and involved an expenditure of Y.32,000,000. Kobe has also excellent railway connections which have tended to centralize the trade at the port. The chief articles imported are cotton and cotton yarns, iron and steel, drugs and medicines, lead, zinc, etc., bean cake manure, grains and seeds, paper and paper manufactures, machinery, hides, leather, hair and bones, oils and waxes, dyes and paints, wool and woollen manufactures, cotton manufacturers, beverages and comestibles, and cotton seed.

The exports are cotton yarn and cotton goods, copper, cloths, grains and seeds, matches, oils, waxes and soaps, earthenware and glass manufactures, braids of straw, etc., camphor, marine products shell buttons, imitation Panama hats, beverages and comestibles, brushes, tea, paper and paper manufactures, sugar and confectionery, mats and matting, toys, umbrellas.

In 1916 the total exports from Kobe amounted to Y.331,104,640, and the imports in the same year to Y.374,000,070. The total trade value has increased a thousandfold in 50 years, the figure for 1868 being but Y.1,137,140.

The following table of values in yen shows the total trade of the port from 1907 to 1917:—

	Imports	Exports	Total
1907	223,437,566	106,668,265	330,105,831
1908	191,080,866	84,114,773	275,195,639
1909	184,224,779	100,616,555	284,841,334
1910	230,336,984	121,049,552	351,386,536
1911	256,235,347	119,054,086	375,289,433
1912	302,199,803	150,475,871	452,675,674
1913	346,608,977	170,470,039	517,079,019
1914	281,959,911	167,522,636	449,482,549
1915	269,216,398	197,597,830	466,814,228
1916	374,099,070	325,671,735	705,203,711
1917	530,929,041	479,770,388	1,010,699,429

The strictly foreign imports in 1917 amounted to Gold $265,000,000 and the exports to foreign countries to $240,000,000. Other evidences of prosperity during the year were the increase of clearing house returns, which amounted to 84 per cent.; bank deposits, which increased 87 per cent.; and the average dividend rate of bank and company shares, which amounted to 27.36 per cent. in 1917 as against 15.26 in 1916. The dividends paid the last term by the seven cotton-spinning companies in this district averaged 77 per cent. In 1917 2,380 vessels engaged in foreign trade entered the port of Kobe, aggregating 5,324,777 tons; and 3,856 357 tons of merchandise were imported and exported.

HARBOR CONDITIONS.—Pilotage is not compulsory and dues vary according to tonnage and draft.

Port Charges are as follow:—

Wharf Dues.—2 sen per net ton for first 24 hours.
1 sen per net ton for next 3 days.

Tonnage Dues.—5 sen per net ton per call.
15 sen per net ton yearly rate.

Customs:	Daytime	Sunset to Midnight	Midnight to Sunrise
Opening	Y.10 per hr.	Y.20 per hr.	Y.30 per hr.
Working Permit	Y.2 per hr.	Y.4 per hr.	Y.6 per hr.

Light Dues: None.

Buoy Dues:

5,000 tons Y. 7 per 24 hours.
10,000 tons Y.10 per 24 hours.
15,000 tons Y.15 per 24 hours
20,000 tons Y.20 per 24 hours.

Sampan attending buoy and ricksha to harbor office—Y.3.20.

Fresh Water: Good. If supplied in daytime, Y.55 per ton; if at night, Y.65 per ton.

Stevedoring:	
Rates for loading cargo:	
Home Cargo, per ton	Y. 45
Coast Cargo, per ton	.42
Rates for Discharging Cargo:	
Home Cargo, per ton	.45
Coast Cargo, per ton	.42
Iron, per ton	.55
Cotton (American) per bale	.22
Lumber, Logs, per 40 cu. feet	.75
Explosives, per ton	1.40
Overtime:	
Coolies, per man per hour	.25
Foremen, per man per hour	1.50
Cost per hour for General Labor:	
Daytime	.35
Night-time	.55
Winchmen:	
Daytime, per man per hour	.25
Night-time, per man per hour	.50
Tallymen:	
Per day	4.00
Overtime, per hour	.75
Lighterage:	
Cost per ton, including 3 days demurrage	2.00
Cost per lighter per day	
100-ton lighter	25.00
200-ton lighter	50.00

ACCOMMODATION.—The total length of quay walls, including extensions now nearly completed, is 9,553 feet, of which 8,412 feet are available for loading and discharging cargo. There are 2 quays and 4 moles, the quays being able to accommodate 1 vessel each, while the moles can accommodate from 2 to 6 vessels each, making a total of 19 vessels for which accommodation can be had at the piers. The water alongside the quays and moles will vary from 30 to 36 feet at low tide when completely dredged out. As the work is not yet complete, however, and as there are usually from 20 to 30 vessels in the harbor at one time, it is still necessary for many vessels to anchor in the harbor or tie to buoys and to load from and discharge into lighters. There is good anchorage in mud and sand in the harbor, which is protected by breakwaters.

When the quays and moles are completed, there will be 602,640 square feet of iron warehouses and 38,016 square feet of wooden sheds for storage on the piers. Railway tracks connect the piers with the trunk line. There will be two stationary cranes of 30 and 50 tons capacity and 52 traveling cranes of from 1½ to 5 tons capacity.

NAMES OF IMPORTING AND EXPORTING FIRMS.—American Trading Company, China and Japan Trading Company, Pacific Commercial Company, W. R. Grace & Company, Dodwell & Company, Sale & Frazar, Limited, Mitsui Bussan Kaisha, Takata & Company, Iwai & Company, T. Yuasa, Masuda & Company, Suzuki & Company.

STEAMER LINES USING THE PORT are the Pacific Mail Steamship Company, calling at San Francisco, Honolulu, Yokohama, Shanghai, Hongkong and Manila; Canadian Pacific Ocean Service, calling at Vancouver, Yokohama, Shanghai, Hongkong and Manila; Nippon Yusen Kaisha—Lines from Kobe to London, Seattle, New York (via Panama), South America, Sydney and Melbourne, Batavia, Bombay, Calcutta, Shanghai, Newchwang, Tsingtau, Vladivostok, Keelung; Osaka Shosen Kaisha—Lines from Kobe to Seattle and Tacoma via Yokkaichi, Shimidzu and Yokohama, to Rio de Janerio via Nagasaki, Hongkong, Singapore, Colombo, Cape Town, Buenos Aires and Santos; to Shanghai, Manila and Singapore; to Bombay via Hongkong, Singapore and Colombo; to Sydney and Melbourne via Yokohama; to Vladivostok; to Tsingtau; to Dairen; to Keelung; and to Korean ports; Java-China-Japan Line—to Batavia, Cheribon, Samarang, Soerabaya and Macassar; Toyo Kisen Kabushiki Kaisha—to San Francisco, calling at Yokohama, Honolulu, Nagasaki, Shanghai, Hongkong and Manila; to South America (Valparaiso), calling at Yokohama, Honolulu, San Francisco, Los Angels, Balboa, Salina Cruz, Callao and Iquique, and the Russian Volunteer Fleet—to Vladivostok.

In addition to the above-mentioned lines, vessels from the following lines call regularly: Peninsular and Oriental Steam Navigation Company, Eastern and Australian Steamship Company, Limited, Indo-China Steam Navigation Company, Limited, British India Steam Navigation Company, Limited, Robert Dollar Company, Yamashita Kisen Kaisha, Ocean Steamship Company, Limited, China Mutual Steam Navigation Company, Limited, Nanyo Yusen Kaisha, Uchida Steamship Company and Nisshin Kisen Kaisha.

In 1917, 2,358 steamships and 22 sailing vessels, with a total tonnage of 5,334,777, entered Kobe harbor.



CONGESTION OF CARGO AT NO. 4 PIER, KOBE



NEW WHARFAGE ACCOMMODATION AT KOBE

There are two floating docks, one of 7,000 tons and one of 12,000 tons, and three graving docks (425 feet, 280 feet, and 180 feet, respectively, in length) in the Mitsubishi and Kawasaki Dockyards.

Moji

Moji (population 65,000) and Shimonoseki (population 60,000) are situated one on each side of the Shimonoseki Straits, in lat. 93 deg. 57 min. N., long. 130 deg. 56 min. E., and as far as shipping is concerned both towns are identical. The principal Japanese banks and business houses are situated at Moji but foreign firms are to be found on the side that suits their convenience. Steamers from all parts of the world arrive at Moji and are brought in from the Rokuren Light, where they stop for medical inspection, by pilots. Railways arriving at Moji and Shimonoseki tap the south and north and help to the success of the port. Imports consist chiefly of machinery, iron ore, sugar, raw cotton, flour and exports of coal, cotton yarn and sugar. The trade of the port is by no means small. Coal was exported to foreign countries in 1916 to the extent of 287,411 tons valued at Y.1,892,209. In 1916 Moji imported goods valued at Y.30.830,043 and the amount of her exports was 27,249,807. The chief trade of the port is conducted with Korea, exports to which exceed thirteen million yen and imports from Korea over ten million. In 1917 trade showed a slight decline of $193,022. As at Nagasaki there was an increasing trade with China and Asia while imports from Europe and America were occupying a less important position chiefly due to embargoes on shipping.



VIEW OF MOJI

Harbor facilities are not quite as up-to-date as they might be and owing to this quite a lot of the trade which would otherwise be handled at Moji is diverted to Kobe. Vessels lie at anchor.

It is proposed to drive a tunnel under the straits to make the railway continuous. At present ferries are used both for passengers and freight cars.

Sugar is one of the chief imports, chiefly coming from Taiwan (Formosa), China, Hongkong and the Philippine Islands. After refining it is exported in considerable quantities to China and the Japanese leased territory of Kwangtung. The importation of foreign machinery in 1916 was $608,169 against a value of $1,286,498 in 1917. Another important item in the trade of the port is the exportation of wheat flour, chiefly to Great Britain. Foreign purchases of this commodity rose from 7,161,328-lbs. in 1916 to 48,443,765lb. in 1917. This increase gave a great stimulus to flour milling, which previously was only done in a small way.

HARBOR CONDITIONS.—Pilotage: Not compulsory.

Port Charges: Tonnage or wharf dues, 5 sen per ton net register. Customs, permits for Sunday and holiday Y.2 per hour, night work Y.4 per hour up. Other charges, buoy rent.

Stevedoring: Rates for loading cargo, 35 sen per ton. Rates for discharging cargo, 30 sen per ton. Overtime cost per hour, 50 per cent. on above charges. Cost per hour for general labor, 15 sen. Lighterage, cost per ton, 65 sen. Lighterage, cost per lighter per day, 10 sen per ton; heavy lifts, extra; demurrage.

Accommodation: Open archorage and four buoys. Minimum depth of water at low tide, 5 fathoms.



PORT OF SHIMONOSEKI

Steamer Lines Using the Port: Nippon Yusen Kaisha, Japan-European Line, Japan-Australian Line, Japan-Indian Line, Japan-New York Line, Japan-Pacific Coast U.S.A. Line, Japan-China Line; Osaka Shosen Kaisha, Japan-Pacific Coast U.S.A. Line, Japan Coasting Service, Japan-Indian Line, Japan-South American Line, Japan-Australian Line, Japan-China Korea Coasting Service; Nanyo Yusen Kumi, Japan-South Seas; P. & O. and B. I., European, Indian and China Services; Indo-China S. N. Co., Ltd., Japan-Calcutta Line, China Coast Services; Ellerman & Bucknall S. S. Co. and allied lines, New York-Vladivostok-Japan Line, Japan-China-London Line, Japan-New York viâ Panama; Bank Line, Ltd., New York-Vladivostok-Japan Line, Japan-South Africa; Blue Funnel Line (Alfred Holt), Liverpool-China-Japan Line, Japan-Pacific Coast U.S.A.; Eastern and Australian S.S. Co., Ltd., Japan-Australian Line; Toyo Kisen Kaisha, Japan-South American Line; Java-China-Japan Line.

Nagasaki

The port of Nagasaki, situated in lat. 32 deg. 44 min. N., long 129 deg. 51 min., opens on the south to the China Sea, indenting the land northward, and is surrounded on land by hills and mountains. The area of water surface of the port is 2,885,000 *tsubo* (*tsubo* equals 0.000816 acre). The water is deep and calm, protected as it is by mountains, and is naturally adapted for the anchoring of big ships.

This naturally gifted port was first opened to foreign trade in the 18th year of Kwanyei, about 300 years ago. During the intervening years the port passed through varying circumstances, favorable and otherwise, but on the whole it had until recent years enjoyed almost monopolistic privileges of foreign trade. After other ports had been opened to foreign trade, Nagasaki could not retain its former privileges; still its trade annually amounts to Yen 32,000,000, the tonnage of vessels coming in and going out being 5,300,000 tons. It is in every way one of the leading ports of Japan.

Along with the world tendency in recent years toward using larger and larger vessels for navigation, Nagasaki saw the need of enlarging the port so as to receive bigger ships. The work of improvement in that direction was completed in April, 1917, whereby the part of the port reaching from the entrance as far as Koyaki Island, which lies near the entrance, has been refitted for the safe anchorage of big ships.

PORT IMPROVEMENTS.—About twenty years ago, the lower part of the Urakami and Nakashima Rivers which empty into the port were dredged and the depth of the water next to the reclaimed ground was made to measure 21 to 30 *shaku* (*shaku* equals 11.93 feet), and at the same time about 200,000 *tsubo* of land was secured to be used for extending the city and for manufacturing purposes. The expenditures made for this work amounted to Yen 5,300,000.

PORT FACILITIES.—Pier.—The pier built and managed by the Nagasaki City Government is 75 *ken* (*ken* equals 1.988 yards) in length and 4 *ken* wide, and can serve coastwise vessels, but a better pier or wharf is needed for large vessels. The authorities of Nagasaki Prefecture are now considering a plan of improvement along that line, and it is expected that the plan will shortly mature and be executed.

DOCKS.—Principal dockyards in Nagasaki are the Mitsubishi Dockyard and the Matsuo Iron Works. There are also the Kubo, the Miyama and the Miura Iron Works.

The Mitsubishi Dockyard was established in 1884. It is located in the western shore of Nagasaki Port, occupying the shore line from Mizunoura to Seihaku Bay. The water front along this shore line has been reclaimed and offices, factory plants and docks have been established thereon. The land space in the premises of the yard measures 170,000 *tsubo*. 12,000 hands are employed daily. There is a 150-ton giant crane in Awabinoura and a gantric crane in the Risshin Dock. There are three dry docks built of stone in the Mitsubishi Dockyard premises, from 370 feet to 728 feet long. The number of new ships built since the commencement of the dockyard until 1917 was as follows:

Warships 21. Largest tonnage, 31,260 tons.
Merchant Marine 250. Largest tonnage, 13,450 tons.
Ships Repaired: Average 400 to 600 per year.

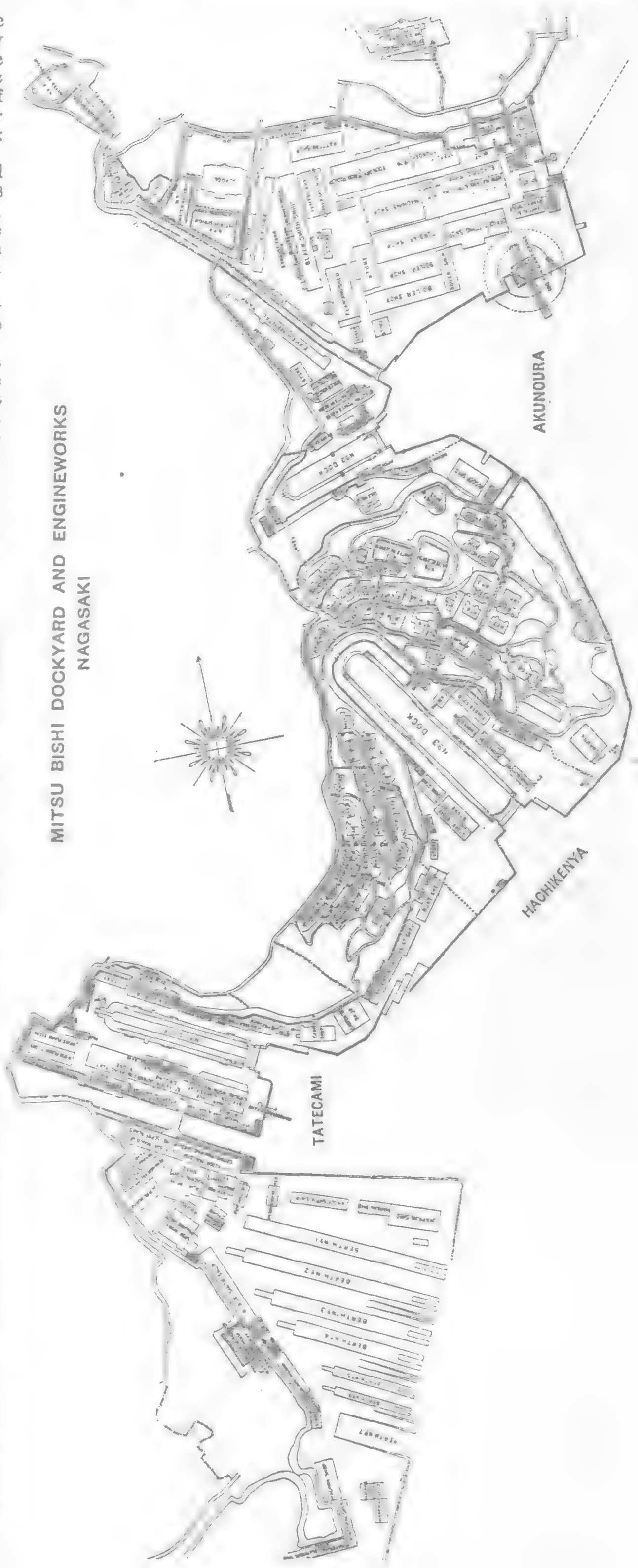
The Matsuo Iron Works is located on Koyaki Island at the entrance of the port as well as at Inasa on the western shore of the port. It was established in 1883. It has two dry docks of 250 and 340 feet long, built of stone. Since the establishment of the yard, 3,000-ton ships have been the largest built there. Altogether 60 new ships have been built, according to a recent report, and 200 ships are being repaired annually.

OTHER FACILITIES.—Warehouses, 26; oil tanks, 8; cranes, 12; coal stations, 13; water pipes laid, 4 places (supplying about 1,500 to 1,600 tons); buoys for ships cables, 8.

COAL TRADE.—There are rich coal mines scattered in abundance in the neighborhood of Nagasaki Port. Coal from these mines is gathered in the port by land and water and is disposed of there to ships and factories and exported for sale, so that Nagasaki Port is a great coal market itself. This coal business is chiefly handled by Mitsui and Mitsubishi companies. The value of the coal exported during 1917 was Yen 1,817,965.

Nagasaki is noted for its coaling facilities, the loading over a ship's side being done entirely by hand. Lighters moor alongside and erect ladders to reach the ship's ports and hatches, and up the ladders and down to the bunkers the coal passes in small baskets through the hands of a line of coolies, men, women and children, who stand closely together. When the coal is to be moved over a horizontal space, such as between the deck railing and the edge of the hatch, a runway is provided over which the baskets slide, and from the edge of the hatch down to the bunkers the line of coolies again takes up the work of passing the coal from hand to hand. Extra ladders and coolie lines are added in any number, only being limited by the ship's means of inlet: a vessel of 5,000 tons will ordinarily use 20 to 36 ladders and lines. On the ladder the coolies stand closely to one another and work at top speed, so that 20 to 35 (or sometimes as many as 45) workers will be able to pass up about 12 tons in an hour. Twenty to 36 ladders used on a 5,000-ton ship will usually deliver 300 to 400 tons per hour. When the ship's stay is limited for any reason, the work can be carried on at greater speed. For instance the *Empress of Russia*, in May, 1913, took in 640 tons in an hour, and in December, 1912, another vessel took on 1,000 tons in an hour.

COMMERCE.—The trade of Nagasaki is constantly increasing and owing to her geographical position the port is rapidly becoming the depôt for Oriental produce. In 1917 China's trade with Nagasaki showed a slight increase, but the greatest volume was done with Hongkong. Trade with the Philippines has also improved, and the imports to those islands in 1917 showed an excess over 1916 of G.$794,743. The following figures are of interest as showing the increases recorded during 1917 over the previous year a state of the prosperity which is due to the splendid harborage and the provision for ships, and the relative cheapness of coal. The trade of the port, consequently, is becoming more and more dependent upon shipping—building.



repairs and supplies, outside industrial and commercial interests playing a second part:—

Countries	Imports from— 1916 G. $	1917 G. $	Exports to— 1916 G. $	1977 G. $
Other Asiatic countries ...	7,423	1,711	153	1,459
China	873,677	1,194,279	1,231,389	1,504,466
Kwangtung Province ...	464,899	784,752	88,595	59,808
Hongkong	912	1,611	983,584	4,111,458
British India	792,676	1,456,335	28,954	57,011
British Straits Settlements	3,353	13,485	45,724	1,403,694
Philippine Islands ...	303	35,039	298,011	432,622
French India	140,790	214,115	3,309	1,030
Asiatic Russia	7,254	1,045	57,692	79,130
Siam	17,167	1,577	307	949
Total Asia	2,308,454	3,703,949	2,737,718	7,651,627
France	4,339	2,594	34,821	2,697
Great Britain	1,602,342	804,135	215,959	1,397,611
Germany	39,628	173	—	—
Russia	915	106	68,432	553,431
Belgium	5,833	6	—	—
Other European countries	12,759	20,843	1,751,212	5,654
Total Europe	1,655,816	827,857	2,070,424	1,959,393
United States	3,024,484	1,612,491	65,714	110,209
Other American countries	9,822	223	99	300
Total America ...	3,034,306	1,612,714	65,813	110,509
All other countries ...	21,443	28,776	78,899	140,658
Grand total	7,030,019	6,173,296	4,952,854	9,862,187

TRAMWAYS.—Nagasaki has 5.8 miles of tramways, consisting of three short lines, with 7-ton trams. The power plant consists of two 300 H.P. 3-phase 3,500-volt A. C. motors driving two 200 K.W. 600-volt D. C. general car, and a 200 K.W. Cascade converter. Average receipts are Yen 314.25 daily. The tramway company engaged in the manufacture of tram cars for itself and others.

PILOTAGE.—Not compulsory.

PORT CHARGES.—Tonnage or wharf dues, 5 sen per ton net register. Customs, permits for Sunday and holiday, Y.2 per hour; night work, Y.4-6 per hour. Other charges, buoy rent, Y.7 per day.

STEVEDORING.—Rates for loading and discharging cargo 30 sen per ton. Overtime, 50 per cent. extra. Cost per hour for general labor, 15 sen. Lighterage, cost per ton, 25 sen per day per ton. Lighterage, cost per lighter per day, Y.4 to Y.8 per day. Special rates for heavy lifts.

ACCOMMODATION.—Open anchorage and nine buoys; minimum depth of water at low tide, 7 fathoms

Steamer Lines Using the Port: Nippon Yusen Kaisha, Japan-European Line, Japan-Australian Line, Japan-Indian Line, Japan-New York Line, Japan-Pacific Coast U.S.A. Line, Japan-China Line: Osaka Shosen Kaisha, Japan Coasting Service, Japan-Indian Line, Japan-South American Line, Japan-China-Korea Coasting Service; P. & O. European, Indian, and China Services; Blue Funnel Line (Alfred Holt), Liverpool-China-Japan Line, Japan-Pacific Coast U.S.A.; Toyo Kisen Kaisha, Japan-South American Line, Java-China-Japan Line, Glen Line, Shire Line, Ben Line, Russian Volunteer Fleet, Canadian Pacific Ocean Services, Ltd., China Mail.



LOADING COAL AT NAGASAKI

SIBERIA

The great COMMERCIAL, INDUSTRIAL, and FINANCIAL Opportunities which await Development in this land of Vast Untouched Natural Resources will be described in the

MARCH ISSUE

OF THE

FAR EASTERN REVIEW

KOREA

Chosen (or Korea) is an elongated peninsula lying between lat. 33 deg. 12 min. and 43 deg. 2 min. N., and long 124 deg 18 min. and 130 deg. 54 min. E. The peninsula is bounded on the east by the Sea of Japan, on the south by the Chosen Channel, on the west by the Yellow Sea, and on the north by Manchuria and the Russian Maritime Province, the rivers Yalu and Tumen marking the boundary. It has an area of 84,129 square miles. Its coast line is 1,700 miles in length.

The people of Korea speak their own native language and in writing use a system of phonetic signs, though educated classes use Chinese ideographs. In all the important cities, in open ports, and in towns along railways the Japanese language is coming to be widely used. The Korean home follows closely the design of Chinese structures, except that a unique warming arrangement is provided by a pit dug under the floor in which straw or other fuel is burned.

The native population of Korea is estimated to be slightly over 15,000,000. The foreign population in 1914, exclusive of Japanese, was 18,025, of whom 16,882 were Chinese and 230 British, the latter being mostly missionaries. The Japanese population was 291,217

The foreign trade of the country has shown steady development under the fostering care of the Japanese, and a record was

established in 1916. In 1904 the total value of the country's foreign trade was Yen 34,933,306. In 1916 the value was Yen 131,258,739—exports 56,801,934 and imports Yen 74,456,805. This shows an increase of more than Yen 15 million in imports, and an increase of over Yen 7 million in exports, as compared with 1915. Japan naturally does the bulk of the trade, her share in 1916 being 70 5 per cent. of the imports and 75.6 per cent. of the exports. China comes next with 12.9 per cent. of imports and 14.2 per cent of exports

The significant growth in exports, establishing a record for the export trade of the Peninsula, was principally due to agricultural and industrial development and to the effect of the European war. In spite of the falling off in the export of rice, the most important item of export, in the year 1916, the increase of other agricultural, mineral and industrial staples not only offset the decrease in rice exports, but augmented the general export trade. The increase in imports, though partially due to increase in the purchasing power of the people, was chiefly caused by the advanced prices of imported goods, for which the European war was responsible.

A brighter era dawned for trade and commerce and much else in Korea when the agreement of 1904 was negotiated, giving to Japan virtual control of the administration. Japan lost no time in exercising the power she had acquired. The reform of the effete, incompetent and corrupt administration, which had for centuries been in vogue in Korea, was a task of no little magnitude. The old order of things cannot be changed in a day, or a decade, but a most promising commencement has been made. Japan has set to work organizing, as among the first essentials of good government, a judicial system which will guarantee the honest and impartial administration of justice by trained judges. A beginning has also been made with the codification of the laws of the country. Gradually the system of local administration is being reformed in a manner which will eliminate old political abuses and lead up ultimately to a system of local autonomy. Fine highways connecting village with village and town with town are now replacing the bridle paths and ruts that have always passed for roads in Korea. There are now in Korea, including roads constructed prior to the annexation in 1910, over 1,600 miles of graded highways. First class roads are 24 feet wide, and include those connecting the capital with the provincial governments: second class roads are 18 feet wide, and run between the provincial governments and the ports and prefectural magistracies. The total length of the roads in the peninsula is over 6,000 miles, the old native roads included, these being now repaired and improved

The initiation of all these undertakings, and the railways, involved the expenditure of a large sum of money which the depleted Korean exchequer could not provide, and a loan was had of the Japan Industrial Bank for ten million yen, but sold at 90, with interest at 6½ per cent., for which the Korean customs receipts were pledged as security. The total of the public loans or debts outstanding on March 31, 1916, was Yen 69,102,780. The first loans were for the reform of the currency, which for a long time had been in a scandalous state. There was no reserve of precious metals, and reliance was placed on a nickel coin of small intrinsic value. Japan instituted the gold standard, abolished private minting, and has taken steps towards driving out the old nickel coins. Included in the scheme of financial reform is the establishment of agricultural and industrial banks to assist trade by giving the necessary financial accommodation. A notes association has also been formed to popularize the circulation of reliable negotiable bills, and warehouses have been established as wholly official or government subsidized enterprises for the purpose of easing the money market in agricultural districts by making loans on the security of rice, or lending money without security for the purchase of rice.

The carrying trade of the country is practically in the hands of the Japanese.

Except along the railway trunk line traversing the peninsula from north to south and a few branch lines, all of which are given a description below, travelling in Korea is done mainly on highways which link the important cities. By sea the ports of Jinsen, Chinnampo, etc., on the west coast of the peninsula, enjoy navigation facilities with Japan on the one side and the ports of Manchuria and North China on the other; while Fusan, Genzan, Joshin, etc., on the east coast lie on the line of steamship services between Osaka and Vladivostok. Coasting vessels, mostly under the Japanese flag, link up most of the ports.

The total length of Korean railways now open to traffic is altogether 1,092 miles. Of these the Keijo-Antung line (309.7 miles) and the Keijo-Fusan line (281.2 miles) constitute the trunk line, which connects on one side with the great trans-continental systems leading to Europe and on the other with the Japanese railways via the ferry service across the Straits. The other lines are branches which act as feeders by bringing the trunk line into connection with important coast towns. The first railway in Korea was undertaken in 1896 by an American, James R. Morse, who secured a concession from the Korean Government to build a line between Keijo and Jinsen (Chemulpo). The concession with all its privileges was purchased, before the work was completed by a Japanese concern organized by Baron Shibusawa and some others. In 1901 the Japanese Government organized a railway company for further construction under a concession gained in 1894. The new company at once commenced work from both ends of the line, and in 1905 the line from Fusan to Keijo (Seoul) (267 miles) was completed and opened to traffic. When the line between Fusan and Keijo was completed, work on the Keijo-Antung and Fusan-Masampo lines had already been commenced as a military measure; and the entire system was in working order by March, 1906, when the Korean railways were taken over by the Government. The lines are of the standard 4 ft. 8½ in. gauge. At the extreme ends of the trunk line there are provided connecting arrangements with other railways, either in Manchuria or Japan (in the former case by a bridge over the Yalu connecting with Antung, in Manchuria, and in the latter by a ferry service across the Straits); while the branch lines terminating on the coast connect with shipping lines with the aid of wharves and other port improvements.

The passenger service by these lines is excellent. Three times a week specially fast through trains run from Fusan, on the Straits, to Changchun, in Manchuria. At Fusan connection is made with the Japanese railways by a ferry from Shimonoseki; at Changchun the trains connect with the Russian trans-continental trains to Europe.

A complete account of the Korean railways is given in the FAR EASTERN REVIEW of April, 1918.

Korea is almost exclusively an agricultural country, but cultivation is carried on mostly in a primitive fashion. The Government has been assiduous in encouraging farming, as well as forestry, mining and fishery. The chief products of Korea are rice and other grains, gold dust, cattle, hides and ginseng. Fans and mattings made of rushes, or blinds made of bamboo, are perhaps all there is to notice among native manufactures. The lands in cultivation total some 100 million acres, and idle tracts measure about 50 million acres.

Ginseng is a very important product of Korea. It is the root of the plant Panax ginseng which, after being steamed and dried, is used as a medicine in Asiatic countries. The cultivation and preparation of ginseng is a Government monopoly, yielding revenue of about Yen 600,000 a year. Ginseng is cultivated in certain areas in distance 46 to 125 miles from Keijo, in regions designated by the monopoly office for the purpose, cultivation being prohibited elsewhere. At Kaijo is a ginseng manufactory where the raw roots produced in the neighborhood are prepared for the market. Ginseng plants are raised from seed. They are lifted from the original soil when about 2 inches in height and transplanted on hillsides, and by the seventh year after transplanting, when the roots have grown to a length of 7 or 8 inches, the ginseng is ready for preparation. The raw roots are first thoroughly washed and cleaned and assorted for size and shape, steamed for about an hour, and then placed in a dessicating room for from 5 to 7 days until thoroughly dried, emerging at about half their former weight, in color light red, and almost translucent. As ginseng is extremely high in price, its cultivation and preparation are closely guarded at every stage. A single root brings from Yen 1 to Yen 3, in Korea, and in China a piece of it is apt to bring almost any price, according to the fancy of the customer.

Korea has a large forestry area, covering about three-fourths to its entire area, although most of the forestry lands have long been denuded of trees. In the north, along the Yalu and Tumen rivers are forests which are now being cut over. Measures of afforestation are now being taken by the Government.

Gold mining has in recent years become an important industry. There are several gold mines now being worked by British, American, French and Italian syndicates.

A number of placer and other mines are worked by natives on a small scale and by Japanese. There is a tendency to increase the output by Japanese operators, for mining is beginning to attract the attention of capitalists of good repute in Japan. Especially has the European war stimulated the more extensive undertakings of mining by Japanese capitalists. Gold and gold ore lead all mineral products of the country, and coal, iron and graphite come next in order. An article on "Gold Mining Operations in Korea" is given in the November, 1918, issue of the FAR EASTERN REVIEW.

Iron is being mined under Government auspices, the annual output amounting to 70,000 tons. Anthracite coal is being mined in Koto county, opposite Heijo, by the Government, with an output of 80,000 tons a year. Other mines include black lead, silver, copper, lead, tin, antimony, mercury, zinc, manganese, and sulphur.

Fishing is carried on along the coasts, in well stocked waters, but almost wholly by primitive methods. If the fisheries are to be developed and industrialized as has been the case in Japan, a tremendous future in this particular line is apparent.

The Government and private concerns, either jointly or alone, operate a number of industries, including rice cleaning plants, a large tobacco manufactory, tramways, electric light works, gas plants, etc., in the cities. Lumber operations are coming to be an important industry along the Yalu.

The Government has established a complete postal system which operates also the telegraphs and telephones Wireless telegraph stations and cables provide excellent service with other Japanese territory, both services being available to the public.

The currency of Japan is in circulation throughout Korea. Though Korea now forms a part of the Empire of Japan, the customs duties levied in the Peninsula are different from those levied in Japan—the old rates are in force there now and will be till 1920 as hitherto, according to the declaration made by the Japanese Government at the time of the annexation (August, 1910). Duties are levied both on imports and exports, and are very low as compared with the tariff in force in Japan. An ad valorem import duty of 5 per cent. is levied on grains, vegetables, fruit, meat and raw materials, and of 20 per cent. on precious metals, jewels, statues and fine art objects in general. An export duty of 5 per cent. ad valorem is levied on grain, cattle, hides, coal, iron ore, etc.

The Customs Tariff

The Korean tariff is as follows:—

IMPORTS.

No.	Article.	*Ad valorem* Rate of Duty. Per cent.
1	Agricultural implements	Free
2	Alum	5
3	Amber	20
4	Anchors and chains	5
5	Arms, ammunition, fire-arms, fowling-pieces, or sidearms imported under special permit of the Corean Government for sporting purposes or for self-defence	20
6	Artificial flowers	20
7	Bamboo, split or not	5
8	Bark for tanning	5
9	Beans, peas, and pulse, all kinds	5
10	Beer, porter and cider	10
11	Beverages, such as lemonade, ginger-beer, soda and mineral waters	7½
12	Birds' nests	20
13	Blankets and rugs	7½
14	Bones	5
15	Books, maps, and charts	Free
16	Bricks and tiles	5
17	Bullion, being gold or silver refined	Free
18	Buttons, buckles, hooks and eyes, etc.	7½
19	Camphor, crude	5
20	Camphor, refined	10
21	Candles	7½
22	Canvas	7½
23	Carmine	10
24	Carpets of jute, hemp, or felt, patent tapestry	7½
25	Carpets, superior quality, as Brussels, Kidderminster, and other kinds not enumerated	10
26	Carpets, velvet	20
27	Carriages	20
28	Cement, as Portland and other kinds	7½
29	Charcoal	7½

IMPORTS.

No.	Article.	*Ad valorem* Rate of Duty. Per cent.
30	Chemicals, all kinds	7½
31	Clocks and parts thereof	10
32	Clothing and wearing apparel, all kinds, hats, boots and shoes, etc.	7½
33	Clothing and wearing apparel made wholly of silk	10
34	Coal and coke	5
35	Cochineal	20
36	Cocoons	7½
37	Coins, gold and silver	Free
38	Confectioneries and sweetmeats, all kinds	10
39	Coral, manufactured or not	20
40	Cordage and rope, all kinds and sizes	7½
41	Cotton, raw	5
42	Cotton manufacture, all kinds	7½
43	Cotton and woollen mixtures, all kinds	7½
44	Cotton and silk mixtures, all kinds	7½
45	Cutlery, all kinds	7½
46	Drugs, all kinds	5
47	Dyes, colours and paints, paint oils and materials used for mixing paints	7½
48	Earthenware	7½
49	Embroideries in gold, silver, or silk	20
50	Enamel-ware	20
51	Explosives used for mining, etc., and imported under special permit	10
52	Fans, all kinds	7½
53	Feathers, all kinds	7½
54	Felt	7½
55	Fire engines	Free
56	Fireworks	10
57	Fish, fresh	5
58	Fish, dried and salt	7½
59	Flax, hemp, and jute	5
60	Flints	5
61	Floor rugs, all kinds	7½
62	Flour and meal, all kinds	7½
63	Foil, gold and silver	10
64	Foil, tin, copper, and all other kinds	7½
65	Fruit, fresh, all kinds	5
66	Fruit, dried, salted, or preserved	7½
67	Furniture of all kinds	10
68	Furs, superior, as sable, sea otter, seal, otter, beaver, etc.	20
69	Gamboge	7½
70	Ginseng, red, white, crude, and clarified	20
71	Glass, window, plain and coloured, all qualities	7½
72	Glass, plate, silvered or unsilvered, framed or unframed	10
73	Glassware, all kinds	10
74	Glue	5
75	Grain and corn, all kinds	5
76	Grasscloth, and all textiles in hemp, jute, etc.	7½
77	Guano and manures, all kinds	5
78	Hair, all kinds, except human	7½
79	Hair, human	10
80	Hair, ornaments, gold and silver	20
81	Hides and skins, raw and undressed	5
82	Hides and skins, tanned and dressed	7½
83	Horns and hoofs all kinds not otherwise provided for	5
84	Incense sticks	20
85	India-rubber, manufactured or not	10
86	Isinglass, all kinds	7½
87	Ivory, manufactured or not	20
88	Jade-ware	20
89	Jewellery, real or imitation	20
90	Kerosine, or petroleum, and other minerial oils	5
91	Lacquered-ware, common	10
92	Lacquered-ware, superior	20
93	Lamps, all kinds	7½
94	Lanterns, paper	5
95	Leather, all ordinary kinds, plain	7½
96	Leather, superior kinds, and stamped, figured, or colored	10
97	Leather manufactures, all kinds	1
98	Lime	5
99	Linen, linen and cotton, linen and woollen mixtures, linen and silk mixtures, all kinds	7½
100	Matches	5
101	Matting, floor, Chinese, Japanese, coir, etc., common qualities	5
102	Matting, superior qualities, Japanese "tatamis," etc.	7½
103	Meat, fresh	5
104	Meat, dried and salted	7½
105	Medicines, all kinds not otherwise provided for	5
106	Metals, all kinds, in pig, block, ingot, slab, bar, rod, plate, sheet, hoop, strip, band and flat, T and angle-iron, old and scrap iron	5
107	Metals, all kinds, pipe or tube, corrugated or galvanized, wire, steel, tin-plates, quicksilver, nickel, platina, German silver, yellow metal, tutenauge or white copper, unrefined gold and silver	7½
108	Metal manufactures, all kinds, as nails, screws, tools, machinery, railway plant and hardware	7½

IMPORTS.

No.	Article	*Ad valorem* Rate of Duty. Per cent.
109	Models of inventions	Free
110	Mosquito netting, not made of silk	7½
111	Mosquito netting, made of silk	10
112	Musical boxes	10
113	Musical instruments, all kinds	10
114	Musk	20
115	Needles and pins	7½
116	Oil-cake	5
117	Oils, vegetable, all kinds	7½
118	Oil, wood (Tung-yu)	5
119	Oil, and floor cloth, all kinds	7½
120	Packing bags, packing matting, tea-lead, and ropes for packing goods	Free
121	Paper, common qualities	5
122	Paper, all kinds, not otherwise provided for	7½
123	Paper, colored, fancy, wall and hanging	10
124	Pearls	20
125	Pepper, unground	5
126	Perfumes and scent	20
127	Photographic apparatus	10
128	Pictures, prints, photographs, engravings, all kinds, framed or unframed	10
129	Pitch and tar	5
130	Planks, soft	7½
131	Planks, hard	10
132	Plants, trees and shrubs, all kinds	Free
133	Plate, gold and silver	20
134	Plated-ware, all kinds	10
135	Porcelain, common qualities	7½
136	Porcelain, superior qualities	10
137	Precious stones, all kinds, set or unset	20
138	Rattans, split or not	5
139	Rhinoceros horns	20
140	Resin	7½
141	Saddlery and harness	10
142	Salt	7½
143	Samples in reasonable quantities	Free
144	Sapanwood	7½
145	Scales and balances	5
146	Scented wood, all kinds	20
147	Scientific instruments, as physical, mathematical, meteorological, and surgical, and their appliances	Free
148	Seals, materials for	10
149	Sea products, as seaweed, bêche-de-mer, etc.	7½
150	Seeds, all kinds	5
151	Silk, raw, reeled, thrown, floss or waste	7½
152	Silk manufactures, as gauze, crape, Japanese amber lustrings, satins, satin damasks, figured satins, Japanese white silk ("habutai")	10
153	Silk manufactures not otherwise provided for	10
154	Silk thread and floss silk in skein	10
155	Soap, common qualities	10
156	Soap, superior qualities	7½
157	Soy, Chinese and Japanese	5
158	Spectacles	7½
159	Spices, all kinds	20
160	Spirits, in jars	7½
161	Spirits and liqueurs, in wood or bottle, all kinds	20
162	Stationery and writing materials, all kinds, blank books, etc.	7½
163	Stones and slate, cut and dressed	7½
164	Sugar, brown and white, all qualities, molasses, and syrups	7½
165	Sugar candy	10
166	Sulphur	7½
167	Table stores, all kinds, and preserved provisions	7½
168	Tallow	7½
169	Tea	7
170	Telescopes and binocular glasses	10
171	Tobacco, all kinds and forms	200
172	Tortoise shell, manufactured or not	20
173	Tooth powder	10
174	Travellers' baggage	Free
175	Trunks and portmanteaux	10
176	Twine, and thread, all kinds, excepting in silk	5
177	Types, new and old	Free
178	Umbrellas, paper	5
179	Umbrellas, cotton	7½
180	Umbrellas, silk	10
181	Umbrella frames	7½
182	Varnish	7½
183	Vegetables, fresh, dried and salted	5
184	Velvet, silk	20
185	Vermicelli	7½
186	Vermilion	10
187	Watches and parts thereof in common metal, nickel, or silver	10
188	Watches, in gold or gilt	20
189	Wax, bees' or vegetable	7½
190	Wax, cloth	7½
191	Wines in wood or bottle, all kinds	10
192	Wood or timber, soft	7½

IMPORTS.

No.	Article	*Ad valorem* Rate of Duty. Per cent.
193	Wood or timber, hard	10
194	Wool, sheep's raw	5
195	Woollen manufactures, all kinds	7½
196	Woollen and silk mixtures, all kinds	7½
197	Works of art	20
198	Yarns, all kinds, in cotton, wool, hemp, etc.	5
	All unenumerated articles, raw or unmanufactured	5
	All unenumerated articles partly manufactured	7½
	All unenumerated articles, completely manufactured	10

Foreign ships, when sold in Korea, will pay a duty of 25 cents per ton on sailing vessels, and 50 cents per ton on steamers.

Prohibited Goods.

Adulterated drugs or medicines.

Arms, munitions, and implements of war, as ordnance, or cannon, shot and shell, firearms of all kinds, cartridges, side-arms, spears or pikes, saltpetre, gunpowder, guncotton, dynamite, and other explosive substances.

The Korean authorities will grant special permits for the importation of arms, fire-arms, and ammunition for purposes of sports or self-defence on satisfactory proof being furnished to them of the *bonâ fide* character of the application.

Counterfeit coins, all kinds.

Opium, except medicinal opium.

EXPORTS.

CLASS I. *Duty-Free Export Goods.*—Bullion, being gold and silver refined; Coins, gold and silver, all kinds; Plants, trees, and shrubs, all kinds; Samples in reasonable quantity; Traveller's baggage.

CLASS II. All other native goods or productions not enumerated in Class I. will pay an *ad valorem* duty of five per cent.

The exportation of red ginseng is prohibited.

RULES.

I.—In the case of imported articles the *ad valorem* duties of this Tariff will be calculated on the actual cost of the goods at the place of production or fabrication, with the addition of freight, insurance, etc. In the case of export articles the *ad valorem* duties will be calculated on market values in Korea.

II.—Duties may be paid in Mexican Dollars or Japanese silver Yen.

III.—The above Tariff of import and export duties shall be converted, as soon as possible and as far as may be deemed desirable, into specific rates by agreement between the competent authorities of the two countries.

Harbor Improvement Works in Korea

Harbor improvements have been carried on steadily in Korea under the Japanese administration with the object of improving customs facilities and harbors at open ports, reclamations or dredgings. Building of Custom House offices or godowns, and other engineering works were commenced in 1906, soon after the establishment of the Japanese Protectorate in the Peninsula. These improvement works in eleven sea-ports and three inland cities, viz., *Jinsen Fusan, Gensan, Kunsan, Moppo, Chinnampo, Seishin, Joshin, Masan, Shin-gishu, Keijo, Heijo* and *Taiko*, were to be carried out in eight years from 1906 at an estimated cost of Yen 4,951,823.

The above improvement of customs facilities and harbor construction were conducted as a first stage. But, with the gradual growth of foreign trade in the Peninsula, and the development of the railway system, further extension of harbor improvements in *Fusan, Jinsen, Chinnampo*, and *Heijo*, such as would offer full facilities for connecting land and water traffic, was planned after the Annexation, as the second stage. This extension programme, which was approved in the 27th session of the Imperial Diet, was to be carried out in six years' consecutive work from the fiscal year 1911, at an estimated cost of Yen 8,271,829.

FUSAN.—For the improvement of Custom House compounds and the harbor of Fusan, Yen 1,143,482 was spent in the first stage, and a large wharf to accommodate two ocean steamers (of 3,000 tons), connecting with the railway, was built. However, the completion of the Antung-Moukden line caused *Fusan* to become the terminal of a world route, so the extension of the harbor on a large scale was urgently needed. Consequently, in the second stage of habor improvements, dredging to a depth 36 feet at the deepest point, construction of a second wharf with an iron pier to berth four ocean steamers from 7,000 to 20,000 tons at one time, extension of landing facilities so as to connect with railways and wharfs, and extension of a break-water with

a double line of stone embankments from *Soryo* in the direction of *Fusanchin*, so as to constitute a basin with an area of 116,000 *tsubo* for the safe anchoring of small steamers and junks, were to be carried out during four years from the fiscal year 1911, at a cost of Yen 3,824,060.

JINSEN (Chemulpo).—In reconstructing the Custom House compounds by reclaiming a lot measuring 17,978 *tsubo* and by building offices, landing piers, warehouses, etc., and by extending the railway to the harbor, over Yen 900,000 was spent in the first stage up to the end of 1910. This port is still important as it leads all the other ports in the import trade. The second stage of extension, which will cost Yen 3,483,394, consists chiefly of engineering work in the shape of harbor reconstruction, and in providing a wet dock system, as the mouth of the harbor is constantly silted up by the deposits of the *Kan* (*Han*) River. This wet dock is to be large enough to provide anchorage for three steamers, of 4,500 tons each, at one time. For the construction of this wet dock, ground, extending from the present Customs compound to *Shato* (an island) along the sea-coast of the settlement street up to the foot of the Japanese Park, is to be reclaimed, and in the middle of the reclaimed ground a wet dock, having a water area of 30,000 *tsubo* and a minimum depth of 26 feet, is to be built in a north-easterly direction. A lock on the double-gate system is to be built with a length of 420 feet and a width of 60 feet, so that it can maintain a depth of 32 feet at neap tide or 43 feet at spring tide. A navigable route to the open sea from the lock is to be dredged to a depth of 14 feet at ebb-tide, and a training wall, 2,070 feet long, to keep the water level of flood tide, is to be built along the east side of the navigable route. The harbor improvement work in *Jinsen* was planned to be carried out in six years' consecutive work from the fiscal year 1911

CHINNAMPO.—To improve customs facilities and harbor equipment in the port of Chinnampo Yen 1,129,380 was apportioned for the first stage, out of which about Yen 474,385 was spent up to the end of the fiscal year 1910. A railway between Heijo and Chinnampo being now in full operation, the lack of connection between land and water traffic in this port is keenly felt, so that the original plan of harbor improvements has had to be enlarged. Consequently, Yen 180,000 having been added to the balance of the fund originally set aside for it (Yen 655,000), the total, amounting to Yen 835,000, was devoted to the further extension of Chinnampo Harbor as the second stage of harbor improvement.

HEIJO.—Although land traffic between Heijo and Chinnampo is maintained by a railway, the water traffic between these places is largely carried on by junks along the Daido (Tai-dong) River. In order to make this transport by river easier, the so-called Unan Shoal is to be dredged to a depth of 4½ feet and a width of 120 feet; a landing pier running up-stream from the Customs Office is to be reclaimed by means of a stone wall; and the navigable route between the Customs Office to Unan Shoal is to be dredged to the depth of six feet at ebb-tide. The railway is to be extended for about one mile, to connect the station with the Customs Office compound.

Genzan

Genzan, situated in long. 127. deg. 26 min. E., lat. 39 deg 10 min. N., occupies a position of great importance as a trading port. It lies midway between Vladivostok and Fusan, besides directly facing Tsuruga across the Japan Sea. Among the few seaports which are found on the east seaboard of Korea, all far up in the north, Genzan, is the southernmost and is never closed in winter, although not entirely ice free. The harbor is deep and spacious. In the neighborhood of Genzan gold is obtained, and some distance off, at Kozan where the Yalu rises, copper is obtained; and the mineral output finds its market through Genzan.

The population of Genzan is 13,500 natives, 5,000 Japanese and 300 Chinese.

THE HARBOR.—The water area is 2,568 acres.

The depth of water at entrance, H. W. O. S. T. is 47 feet; at L. W. O S. T. 45 feet.

The depth of water available for vessels entering port at H. W. O. S. T. is 45 feet; at L. W. O. S. T. 43 feet.



GENZAN, KOREA

The depth of water available in port, H. W. O. S. T., is 31 feet; at L. W. O. S. T. 32 feet.

There are no quays. Vessels load and discharge by lighters.

Fusan

Fusan is situated in lat. 35 deg. 6 min. N. and long. 129 deg. 3 min. E. The port faces the Tsushima Straits, being protected from the open sea by an island 20 miles in circumference. The entrance to the harbor, facing southeast, is further protected by two other smaller islands. Fusan is the first port of Korea. Its population is 83,000, of whom 28,000 are Japanese. Fusan is a centre of the fishing industry. The streets are well laid out and are supplied with a waterworks system, telephone service, electric light, etc. The Japanese Railways operate a ferry service across the Tsushima Straits, a distance of 122 miles, twice daily from each end, making the crossing in 11 hours and connection with trains on both sides.

As a trading centre Fusan has become the first port in the peninsula, the value of the trade in 1916 being Yen 37,904,000 compared with Yen 32,354,000 in 1915 and Yen 28,704,000 in 1914. There are few European firms in the port and business is carried on principally by the Japanese.

THE HARBOR.—Extensive port improvements were undertaken at Fusan and completed in 1914, at an expenditure of Yen 3,824,060.



SCENE ON FUSAN PIER

The available water area is 2,410 acres. Depth are as follows:

Depth of water in port, H. W. O. S. T. 24 feet 6 inches to 58 feet 6 inches; at L. W. O. S. T. 20 feet to 54 feet.

Depth of water at entrance, H. W. O. S. T. 34 feet 6 inches; at L. W. O. S. T. 30 feet.

Quayage:—

1. Landing pier, 1,161 feet.
   Depth alongside, H. W. O. S. T. 27 feet.
   Depth alongside, L. W. O. S. T. 22 feet 6 inches.
2. Landing pier, 912 feet.
   Depth alongside, H. W. O. S. T. 28 feet 6 inches
   Depth alongside, L. W. O. S. T. 24 feet.

The latter pier is at the front of a mole with railway connection.

There is good anchorage between the mainland and an island, with clay bottom. Vessels discharge by lighters and at pier.

A new landing pier, 1,200 feet long, 126 feet wide, and with railway connection, is being constructed northward of the present mole, the width of the slip being 690 feet, the depth alongside varying from 27 feet to 36 feet L. W. O. S. T., or from 31 feet 6 inches to 40 feet 6 inches H. W. O. S. T., at which two steamers of 700 tons and 20,000 tons may be moored on each side.

At the entrance of the port an area of some 214 acres is now being dredged to a depth of 36 feet L. W. O. S. T., or 40 feet 6 inches H. W. O. S. T., in order to make a steamer of 20.000 tons to pass through freely.

At the foot of the new pier, under construction, an area of 15 acres has been reclaimed, where sides and railways yard will be accommodated.

Moppo

Moppo is an open port, having been opened to trade on October 1st, 1897. It is situated 230 miles south of Chemulpo. It has an excellent roadstead, with a depth of 67 fathoms, which is protected from rough seas by a group of islands. The only drawback is found at the entrance, where there is a rapid current due to its narrowness. The trade of the port is almost entirely in the hands of Japanese. Its population is 6,693, of whom. 3,742 are natives, 2,873 are Japanese, and 72 are Chinese.



PORT OF MOPPO

The trade of the port in 1916 amounted to Yen 4,901,000 as compared with Yen 4,526,000 in 1915. There are no European firms in the port.

The water area of the harbor is 2,701 acres. There are customs quays totalling 6,000 feet in length, although the depth alongside is only about 5 feet or so. The depth of water at the entrance at H. W. O. S. T., is from 42 to 72 feet; at L. W. O. S. T., 30 feet to 60 feet. Vessels are generally double-anchored. Loading and discharging is carried on by means of lighters.

Kunsan

Kunsan, one of the ports opened to foreign trade on the 1st May, 1899, is situated at the mouth of the Yong Dang River, which runs for many miles, forming the boundary line between the two provinces of Chulla-do and Chung-Chong-do, on the West Coast of Korea, and lies about halfway between Jenchuan and Moppo. The two provinces referred to are so noted for their abundant



PORT OF KUNSAN

supply of agricultural produce that they are called the magazines of the kingdom. In 1916 the foreign trade of the port was valued at Yen 7,652,000 as compared with Yen 9,581,000 in 1915. The principal articles of export are rice, wheat, beans, different kinds of medicines, ox-hides, grasscloth, paper, bamboo articles, fans (both open and folding), screens and mats, bêche de mer, dried awabi, with various kinds of fish and seaweed. Among import goods, shirtings, lawns, cotton yarn, matches, kerosene oil, etc., had already found their way to the port prior to its opening for distribution to different markets. Rice is still largely exported from Kunsan, and Japanese farmers have been attracted in considerable numbers to this neighborhood. No Europeans reside in the port, but there is a foreign Municipal Council consisting of three members—two Japanese and one Korean—and there is a separate Municipal Council for the Japanese Settlement.

Chemulpo (Jinsen)

Chemulpo (known by the Japanese as Jinsen) is the largest port in Korea. It is a city of 28,438 people, classed according to nationality as follows: natives 14,977; Japanese 10,907; Chinese 2,478; other nationalities 78. Shipping cleared from the harbor reaches roughly three million tons a year. A few years ago an association was organized by a number of interested persons at Pohang, a port on Yougil Bay, North Kyongsangdo, with the purpose of effecting the construction of a harbor there. They collected Yen 10,000 from among themselves for contribution towards the fund needed for the work and have since been endeavoring to attain their end. It is estimated that the total expenditure needed for the work is Yen 120,000. Of the sum 70.000 will be subsidized from the national coffers, and the balance will be met by the provincial office as well as by contributions from the local people. The harbor will be so constructed as to berth several steamers of 10,000 and more tons.

The port has two anchorages, the outer one accommodating ships of all sizes, and the inner one frequented by ships of about 1,000 tons. An enormous rise and fall of the tide, which averages 30 feet, renders the inner anchorage difficult of access to larger ships, and is also a serious hindrance to the navigation of the Seoul River. Only vessels not drawing over six feet may safely run between Chemulpo and Mapu, a place on the river three miles south-west of the capital.

The steamers of the Nippon Yusen Kaisha and Osaka Shosen Kaisha call regularly and have the bulk of the trade and passenger communication with Japan, and, in the case of the former, with North China. The Russian East Asiatic Steamship Company have a regular service between Vladivostok and Shanghai, touching at Chemulpo.

There are telegraphic communications with China (overland), and with Japan, a cable between Chemulpo and Chefoo remaining a desideratum.

The volume of trade at the port has more than trebled during the past ten years. In 1916 it reached the record figure of Yen 24,533,000, as compared with Yen 20,964,000 in 1915 and Yen 19,473,000 in 1914. Japanese enterprise is abundantly in evidence,



THE PORT OF CHEMULPO

and many projects for the improvement and development of the port are at present receiving attention, including harbor improvements, waterworks, and industrial enterprises.

The water area of the harbor is 3,760 acres. Depths are as follows: At entrance to port, H. W. O. S. T. 60 feet; L. W. O. S. T. 27 feet.

The length of Customs Quays is about 3,300 feet, and the Depth of water at quayside, H. W. O. S. T. is 15 feet; at L. W. O. S. T., 18 feet lower than foot of quay.

There are 6 wooden piers, with a total length of 2,070 feet, which are, however, only used by lighters at present.

INNER HARBOR.—The depth of water available for vessels entering the port at H. W. O. S. T., is 43 feet, at H. W. O. N. T. 38 feet; at L. W. O. S. T., 10 feet.

The Depth of water available in port at H. W. O. N. T. is 38 feet; at L. W. O. N. T., 16 feet.

The bottom of the anchorage is of sand. There is a depth of 60 feet in the outer harbor at H.W., and 27 feet at L.W. (tide 3 feet per second). Vessels are discharged by lighters, each of which is of from 25 to 30 tons capacity. There is a bar between the outer and inner harbors with 10 feet of water at L. W. O. S. T.

There is a crane to lift 10 tons situated near the railway station and 1 crane to lift 3 tons near the wooden jetty in the Customs compound.

Work is in progress on a basin which will be 1,500 feet long, 740 feet wide, with a minimum depth of 26 feet. The entrance locks are now being built. A breakwater, 4,200 feet in length. is to be built (of which 2,520 feet have been erected), and a channel, leading from the Outer Harbor to the new basin, and having a depth of 14 feet at low water, is being dredged out.

A railway line has been opened from the railway station to the Customs warehouses.

Chinampo

Chinampo lies on the north bank of the mouth of the river Daido, 37 miles below Heijo. Its population is 12,490 (natives 7,942. Japanese 4,252 and Chinese 296.)

Chinampo was opened to foreign trade on October 1st, 1897; the rich hinterland is chiefly given up to agriculture, but there is a considerable quantity of mineral wealth which is being developed. The principal articles of export are rice, beans, wheat, maize, cow hides and timber. Of imports, cotton and silk piecegoods, matches, kerosene, porcelain, iron and hardware rank amongst the most important.

The business of the port is increasing year by year, the rich hinterland holding out good prospects for the future. The foreign trade of the port in 1916 was worth Yen 12,076,000, exports being valued at Yen 8,232,000 and imports at Yen. 3,844,000. In 1915 the total trade was Yen 7,532,000, with exports of Yen 4,987 000 and imports of Yen 2,515,000.

There is a deep harbor, the river at this spot being 2 miles wide, affording excellent anchorage for very large vessels. Ice usually blocks the port in the winter months, but port improvements well under way will obviate this to a large extent..

Depth of water at the entrance, at H. W. O. S. T., is 55 feet; at L. W. O. S. T., 36 feet 6 inches.

Depth of water at Quayside, H. W. O. S. T., is 4 feet; at L. W. O. S. T., Dry.

Total length of quayage is 1,234 feet.

The Length of Customs wooden pier is 266 feet.

Depth of water alongside, at head, H. W. O. S. T., is 15 feet

It can be reached by vessels drawing 9 feet.

Dry alongside at L. W. O. S. T.

The length Customs Jetty is 260 feet.

This jetty has only 2 or 3 feet of water alongside.

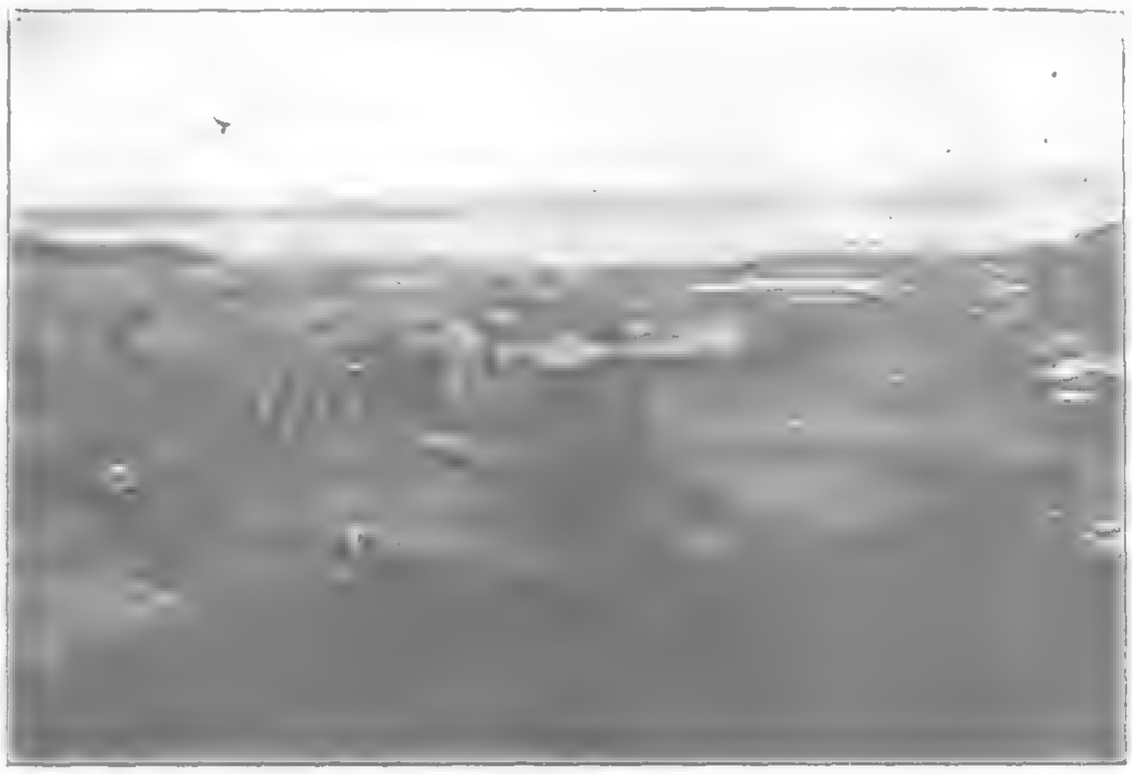
Depth of water available for vessels entering the port, H. W. O. S. T. is 55 feet; at H. W. O. N. T. 49 feet 4 inches.

Depth of water available in port, H. W. O. S. T., 60 feet 6 inches; at L. W. O. S. T. 42 feet.

The bottom of the harbor is sand and mud. Loading and discharging are carried on by means of lighters. No bar. No crane

This harbor is under construction at the present time, and the above particulars may therefore be only approximate ones. There is an open dock (or basin) with a quay wall 840 feet in length and a depth alongside of 18 feet at L. W. O. S. T. for the loading and discharging of cargoes.

A landing stage 3,300 feet long with a wooden pier, 180 feet long, and a basin 600 feet long for the use of the Lighters was completed in July, 1913.



PORT OF CHINAMPO

A coal shipping stage with three piers (each 144 feet in length) was completed in November, 1911, and vessels may now load there instead of going up the river to Kenjiho. These piers are used only by lighetrs. The depth alongside H. W. O. S. T. is 15 feet. Dry at low water.

The remaining improvements consist of dredging the open dock and approaches to same, which is now being done.

Joshin

This port (Joshin) is situated on the north-eastern coast of Chosen (Korea), in the province of North Ham-kiung, about 120 miles from Wonsan. It was opened to foreign trade on the 1st May, 1899. The harbor is a bad one; indeed, it is little more than an open roadstead anchorage; from N.E. to S.E. it is quite exposed, and even with a moderate breeze from those quarters communication between ship and shore may have to be suspended. The anchorage is not spacious, though very easy of access, and vessels drawing 10 feet or so can lie within a quarter of a mile from the shore. Improved jetty accommodation has encouraged the visits of vessels to the port. Trade is carried on by small coasting steamers, principally with the port of Wonsan. The exports chiefly consist of beans, cowhides, hemp cloth and bêche de mer, whilst cotton goods, kerosene oil, ironware and matches form the principal items of imports. The foreign trade for 1916 totalled Yen 1,748,000 as compared with Yen 1,070,000 in 1915. No Europeans reside in the port.

TAIWAN (FORMOSA)

Since the Japanese took over the island of Formosa by treaty with China which was ratified on June 2, 1896, many improvements have been made. Schools have been established and the whole country, as far as possible, has been properly organized. The receipts are from inland taxes, customs and public undertaking. The Government has undertaken a monopoly of the camphor trade, which is one of the chief industries of the island, though quite a large trade is done in flour, sugar, tobacco, oil, spirits, iron work, glass, bricks, and soap while mining is making steady progress. The commerce of the country is chiefly with Japan, the chief foreign countries with which there is traffic being China and the United States. About [illegible] tons of shipping enters the ports during the year, chiefly Japanese with British second. The following figures show the value of Taiwan's imports to and exports from Chosen, Japan and other countries in 1916 and 1917:—

	1916		1917	
	Imports	Exports	Imports	Exports
	$	$	$	$
China	33,371	37,727	21,676	45,383
Japan	24,688,024	40,183,976	33,770,635	52,590,201
Other countries ..	7,691,873	15,778,758	10,518,039	20,047,572
Total	32,413,268	56,005,461	44,310,350	72,683,161

Keelung

Keelung, situated in lat. 25 deg. 9 min. N., long. 121 deg. 45 min. E., is the chief port and has excellent anchorage. Pilotage is not compulsory but pilots will respond to any call. The harbour improvement scheme has been in progress for some time and will cost 6,500,000 yen. The steamer anchorage is now of a uniform depth of 30 feet and the harbor has been widened to 480 feet at its narrowest part. Further extensions are contemplated and when these are finished there will be sufficient accommodation at the quay for ten steamers of 10,000 tons capacity and for 6 steamers at the buoys.

The population of the port is 37,828.

Imports and exports of Keelung in 1917, in terms of gold dollars, were as follows:

IMPORTS.

Articles	Unit	Quantity	Amount
Rice	lbs.	8,707,952	$172,792.06
Beans	,,	600,522	12,427.11
Condensed Milk	doz.	29,116	49,768.74
Tobacco, leaf	lbs.	1,220,926	142,341.19
Petroleum	gal.	81,200	26,986.30
Ginseng	lbs.	5,152	5,958.57
Opium	,,	221,739	1,789,786.09
Jute	,,	2,367,527	1,332,969.06
Satins & Italians	s. yd.	181,386	34,398.49
Ramie Cloth	,,	146,545	19,112.49
Gunny Bags	No.	547,593	78,562.60
Chinese Paper	lbs.	655,162	17,874.71
Joss Paper	,,	36,379	3,972.55
Porcelain	—	—	6,902.73
Tea Lead	lbs.	155,635	14,634.46
Steel Rails	,,	635,664	20,626.43
Mattings	sht.	2,136,101	203,555.99
Bean Cakes	lbs.	63,080,790	869,259.38
Tea Cakes	,,	520,026	2,107.66
Paraffin Wax	,,	113,875	12,836.38
Board for making tea box ...	set.	10,000	1,313.05
Cotton Tissues	s. yd.	76,925	13,182.83
Sugar making machinery	—	—	2,155.39
Timbers	—	—	50,268.18
Coal	lbs.	1,979,113	174,964.53
Others	—	—	1,218,493.02
		Total ...	$5,032,377.99

EXPORTS.

Articles	Unit	Quantity	Amount
Bamboo Sprout (dried)	lbs.	135,181	$10,407.68
Bamboo Sprout (dried)	lbs.	135,181	10,407.68
Lung Ngans (dried)	,,	1,574,443	55,502.99
Lung Ngans (not dried)	,,	67,109	5,602.14
Oolong Tea	,,	2,034	333.50
Sugar	,,	9,568,819	419,955.34
Molasses	,,	233,538	996.50
Fish (dried and salted)	,,	23,299,617	790,795.48
Petroleum	gal.	1,358,330	352,812.38
Camphor	lbs.	6,473,262	2,307,371.05
Matches	gross	2,002,591	795,962.93
Ramie	lbs.	316,209	26,617.41
Cotton Cloth	s. yd.	4,440,809	417,724.06
Coal	lbs.	29,940,256	814,512.11
Rice	,,	5,382,014	161,611.21
Cuttle Fish (dried)	,,	3,339,300	294,915.59
Alcohol	litre	1,576,998	118,270.12
Timbers	—	—	5,952.09
Others			1,880,672.51
		Total ...	$8,460,015.09

ACCOMMODATION.—A breakwater is constructed at the entrance of the harbor, making the inner harbor very calm. The

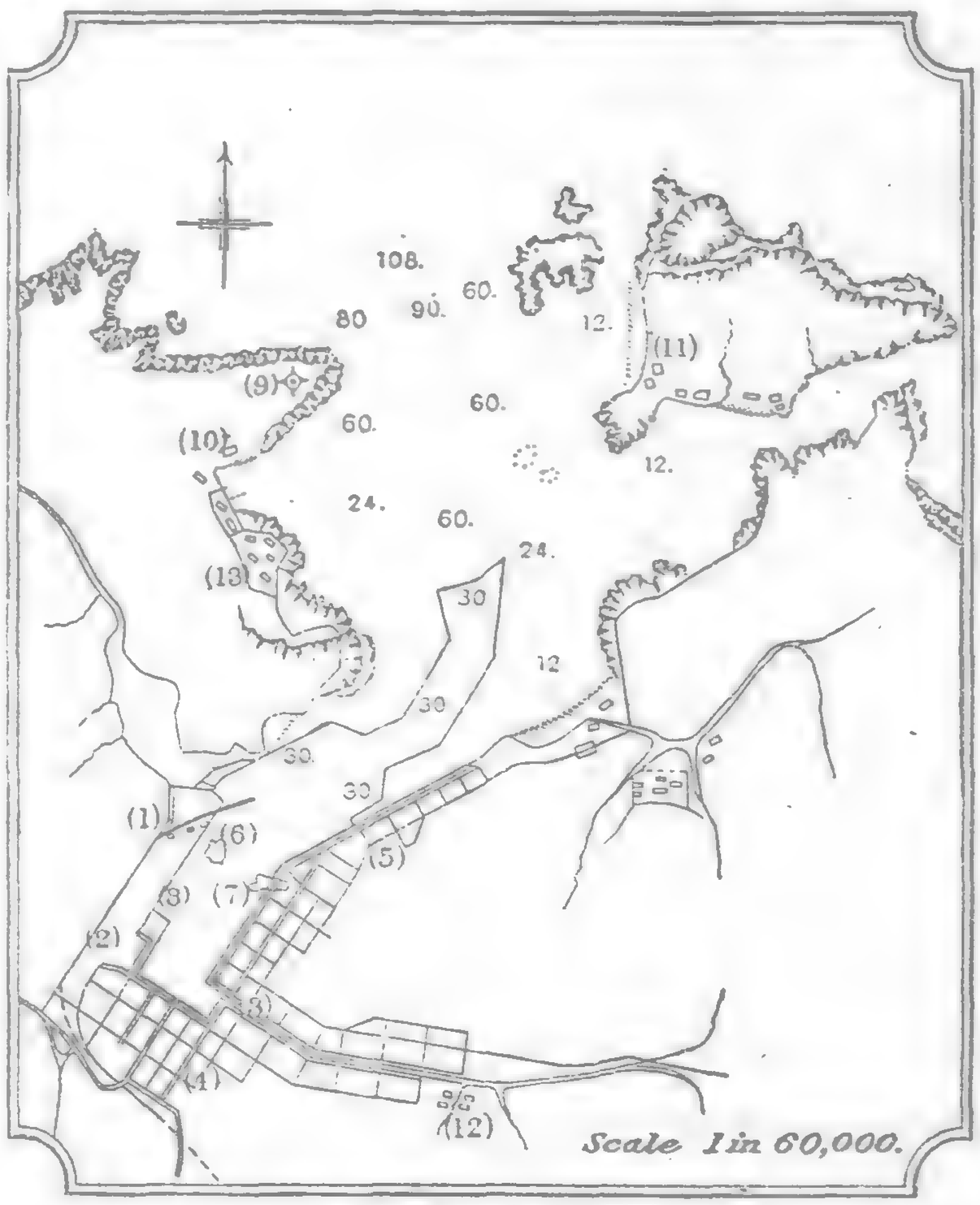


CHART OF KEELUNG HARBOR

1. Old Railway Station; 2. New Railway Station; 3. Gijiu Bashi; 4. Dai-Keelung; 5. Sho-Keelung; 6. Haukan Island; 7. Haubo Island; 8. Quay Wall; 9. Light House; 10. Port Quarantine; 11. Meteorological Station; 12. Denryo Ko; 13. Office of Harbor Works.

entrance to the harbor is wide enough to permit vessels of less than 6,000 tons to pass freely in and out. It is possible for four 6,000-ton ships to lie alongside the wharves. There are also two piers capable of accommodating two 2,000-ton ships. On the wharves there are four iron and concrete sheds and nine cranes

(2 of 10 tons capacity, 1 of 30 tons, and 6 of 1½ tons). Keelung contains several shipbuilding yards, but all of them very small. There is only one dock which is able to accommodate only vessels of small dimensions. The inner harbor contains ten buoys, and there are two in the outer harbor. Altogether, including wharves, piers and buoys, there are accommodations for 17 vessels. The depth of the harbor is 30 feet at neap tide.

PORT CHARGES.—Tonnage Dues.—(Taiwan Government Tonnage Regulation, Law No. 22, July 21, 1899).—Vessels of foreign type, 5 sen per registered ton. Vessels of Japanese and Chinese type of not less than 1,000 koku in loading capacity, Yen 5 per vessel; of less than 1,000 koku in loading capacity, Yen 3 per vessel.

Wharf Dues. (Taiwan Government Notification No. 16, March, 1914), 1 sen per ton per day; but for subsidized steamers (i.e., vessels plying under order of the government) 1 sen per ton per day.

Light Dues.—No charge.

Customs.—Customs duty charged according to the Imperial Japanese Customs Tariff.

Customs Fees. (Taiwan Government Regulation No. 45, June, 1907, regarding fees to be paid to the Customs).

Fees to be paid to the customs for the opening of offices by special permission, outside the hours open for the transaction of business:

From 8 a.m. to 6 p.m. ...	.. Y.10.00	per hour
,, 6 p.m. to 12 midnight ...	15.00	,, ,,
,, midnight to 7 a.m... ...	20.00	,, ,,
,, 6 a.m. to 8 a.m.	15.00	,, ,,

For the transaction of business concerning goods destined for Japan, the fees for the opening of office by special permission, shall be Yen 5 per hour from sunrise to sunset; from sunset to sunrise, Yen 7.50 per hour.

When the office is specially opened for the purpose of merely receiving report on entrance or clearance of a vessel, the fee shall be one-half of the amount above stated at both the main and branch customs.

Fees to be paid, when special permission is obtained, for loading and discharging, carrying in and out of the customs, and handling of cargo:—

From sunrise to sunset—		
Vessel of foreign type	Y.2	per hour
Vessels of Japanese and Chinese type	1.50	,, ,,
From sunset to sunrise—		
Vessel of foreign type	3	,, ,,
Vessel of Japan and Chinese type ...	1.50	,, ,,

Fees for the examination of goods in places other than those specified by the customs:

Charged by the time required for the examination at the rate of Yen 3 per hour. In case travelling expenses are necessary, the actual amount of such expenses shall be charged.

Fees to be paid for special permission for the entrance into or clearance from unopen ports:

Yen 10.00 per entrance or clearance.

Fees for certificate and statistical tables regarding ships or merchandise:

Certificate	Y. 2 per case
Statistical table regarding ship or merchandise	10 per month
Other statistical table regarding ship or merchandise	Sen 50 to Y.5 per case
*Certificate to ship log	Y.1.50 per copy

OTHER CHARGES. — Consumption Tax on Textiles (Consumption Tax Law on Textiles, Law No. 7, effective in Taiwan by Imperial Ordinance No. 131, March, 1910).—10 per cent. ad varolem.

*(Taiwan Government Tonnage Regulation, Imperial Ordinance, No. 96, August, 1899).

Consumption Tax on Petroleum (Consumption Tax on Petroleum, Law No. 21, March, 1908, effective in Taiwan by Imperial Ordinance No. 131, May, 1908).—Yen 1.00 per koku (about 39.7033 gallons).

Consumption Tax on Sugar. (Consumption Tax Law on Sugar, Law No. 21, March, 1901, effective in Taiwan by Imperial Ordinance No. 155, August, 1901).

Class 1 Sugar under No. 11 Dutch Standard:		
(*a*) Black sugar in cask	Y.2.00	per 100 kin
(*b*) "Shiroshitato" in cask except as has been separated from molasses, or made by further additional work from sugar other than "Shiroshitato," or manufactured by adopting wholly or partly a new type machinery ...	2.50	,, ,, ,,
Other	3.00	,, ,, ,,
Class 2 under No. 15 Dutch Standard ...	5.00	,, ,, ,,
Class 3 under No. 18 Dutch Standard ...	7.00	,, ,, ,,
Class 4 under No. 21 Dutch Standard ...	8.00	,, ,, ,,
Class 5 at or above No. 21 Dutch Standard	9.00	,, ,, ,,
Class 6 Rock candy sugar, cube sugar, loaf sugar, and similar sugar	10.00	,, ,, ,,
Molasses:		
Class 1 Molasses produced in making rock candy sugar:		
(*a*) Containing not more than 7 per cent. by weight of sugar calculated as cane sugar	3.00	,, ,, ,,
(*b*) Other ... ... of sugar contained, calculated as cane sugar.	9.00	,, ,, ,,
Class 2 Other Molasses:		
(*a*) Containing not more than 6 per cent. by weight of sugar calculated as cane sugar	2.00	per 100 kin
(*b*) Other	3.00	,, ,, ,,
Syrups	8.00	,, ,, ,,

Tea Manufacture Tax (so-called Export Tax). (Regulation Governing the Manufacture of Tea, Law No. 9, October, 1898) Yen 2.40 per 100 kin.

STEVEDORING.—Rates for Loading Cargo: Average Yen 0.30 to Yen 0.35 per ton.

Rates for Discharging Cargo: Average Yen 0.30 to Yen 0.35 per ton.

Cost per Hour for General Labor: Yen 0.12.

Overtime Cost per Hour for General Labor: Yen 0.12.

Lighterage: Cost per ton: Yen 0.25 to Yen 0.30 (hazardous goods excepted).

Lighterage: Cost per Lighter per day: Under 10 tons, Yen 8.00; 10 tons and over, Yen 16.00.

Principal Importing and Exporting Firms:

Mitsui Bussan Kaisha, Ltd.
Samuel Samuel & Co., Ltd.
Standard Oil Co. of New York
Mitsubishi & Co.
Suzuki & Co.
Yayeyama Coal Mine Office.

Steamer Lines Using the Port:

Nippon Yusen Kaisha, Japan Line, Keelung, Moji, Kobe.
Osaka Shosen Kaisha, Japan Line, Keelung, Moji, Kobe.
Osaka Shosen Kaisha, South China Line, Keelung, Amoy, Swatow, Hongkong.
Osaka Shosen Kaisha, North China Line, Takao, Keelung Foochow, Shanghai, Tsingtau, Tientsin.
Osaka Shosen Kaisha, South Sea Line, Keelung, Amoy, Hongkong, Manila, Sandakan, Davao, Batavia, Samarang, Soerabaya, Macassar, Sandakan, Hongkong, Takao.

Consular Representation in Taiwan: American Consul at Taihoku, British Consul at Tamsui, Netherlands Consular Agent at Taihoku.

CHINA'S CORPORATION REGULATIONS

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FAR EASTERN REVIEW, 5 JINKEE ROAD, SHANGHAI

THE PHILIPPINE ISLANDS

The Philippines, to give them the name bestowed in honor of King Philip II of Spain by Ruy Lopez de Villalobos, were discovered by the Chinese many centuries before the lure of the Spice Islands set the Portuguese, Spanish and Dutch explorers scouring the seas. The earliest date to be assigned to this discovery is problematical although eastern burial jars similar to those of the Yuan Dynasty and believed to be of early 13th Century work, have been found in graves, while the knowledge of the metallurgy of copper and appliances for its manufacture found among the rudest and more ancient of the tribes points to very early intercourse with traders from the main land.

To the Portuguese the Islands were known as Eastern and to the Spaniard as Western so that they marked the limits of exploitation by these two nations which sought to divide between them the newly discovered world beyond the Pillars of Hercules. This great archipelago has the general shape of a donkey's head with Luzon forming the ears and Mindanao's eastern tip, the nose. It stretches from 4 degrees to 20½ degrees of North latitude and from the 116 to the 127 degree of East Longitude. From the northernmost of the Batanes Islands, which are about 100 miles south of Formosa, to the islets of the Sulu group some 50 miles north of Borneo, is about 1,150 miles and the extreme distance from east to west is almost 700. On the north and west lies the stormy China Sea, on the east the Pacific, and on the south the Celebes Sea. There are altogether over 3,000 distinct islands, many of which are inconsiderable islets or mere coral rocks. The two largest are Luzon and Mindanao, with areas of about 40,000 and 36,000 square miles. The surrounding waters are generally shallow, and real sea depths are found only at a distance of 100 to 300 miles out in the Pacific.

In their geological structure the Islands are volcanic, with some additions of coral growth. All are mountainous, but Luzon and Mindanao are among the very few bodies of land in this part of the world which contain considerable stretches of comparatively level land, well adapted for grazing.

The total area of the Philippine Islands is 120,000 square miles made up as follows: Commercial forest, 61,000; non-commercial forest, 11,000; cultivated land, 14,000; grass land, 20,000 and unexplored and other small islands, 14,000 square miles.

The area of cultivated lands include: Rice, 2,189,000; abaca (hemp), 1,236,000; coconuts, 680,000; corn (maize) 1,070,000; tobacco, 145,000; sugar cane, 444,000; maguey, 76,000; cacao, 2,600 and coffee, 2,000 acres.

The mean annual rainfall in Manila is about 76 inches. The coolest months in all the islands are December, January and February; the hottest, March, April, and May. The Islands have a mildly tropical climate. The temperature record for the past 30 years shows an average of 80 degrees. The recorded death rate per 1,000 whites in Manila for 1917 was 8.8 as compared with 16.5 for New York, 15 for San Francisco, 14 for Chicago, 18 for Glasgow, and 22 for Belfast.

Comparatively few of the numerous rivers are of great commercial value throughout the year. The longest are the Cagayan, Agno, and Pampanga in Luzon and the Agusan and Cotabato in Mindanao. The first in particular is navigable by launches of moderate draft for about a hundred miles from tide water. All of them wind through valleys of considerable extent which derive great fertility from the periodical inundations. A moderate amount of irrigation increases this many fold and would enable these districts to support a population fully equal in density to that of Java. Several smaller rivers are now for one reason or another of as great commercial importance as these—notably the Pasig, in Luzon, which forms the outlet of the great Lake of Bay and carries the products of many square miles of fertile country to the doors of Manila. The higher mountain slopes are generally clothed with tangled "mossy" forests or pine groves interspersed with stretches of bare, red earth, and patches of coarse grass, ferns, and *runos*. The more open portions of the low country are mostly covered with the tall *cogon*, similar to the well-known pampas grass.

The economic plants, especially those that produce valuable fibres, are legion. The *abacá* or manila hemp, the *sabutan*, the *pandan*, and the *buri* palm are the most important of this class. The ordinary tropical fruits are generally found, especially in the southern islands.

The hardwood forests of the Philippines, of which the systematic exploitation has only just begun, are 72,000 square miles in area, and of enormous value, while many of the useful forest products, such as the *bejuco* or rattan, are plentiful. The staple tropical cereal—rice—and the commoner tropical economic plants, such as the coco palm, sugar cane, and tobacco, with abacá or manila hemp, make up over 90 per cent. of the exports of the Islands.

This great aggregation of islands and islets is inhabited by a large variety of types of the human species. The aboriginal people were unquestionably the race of pygmy blacks, of whom small remnants still exist under the name of Aetas or Negritos who are found only in certain parts of the mountains of Luzon. Panay, Palawan, northeasthern Mindanao, and a few others of less importance. Aside from the Negritos, who form much less than 1 per cent. of the total population (now about 8,000,000), practically the whole of the people of the Philippines belong to that section of humanity which is somewhat vaguely and altogether incorrectly described in the school geographies as the "brown or Malay race."



LAUNCH TOWING THREE TIMBER-LADEN BARGES, PASIG RIVER

Outside about a half million Igorots, etc., in Luzon the non-Christian portion of the population of the Philippines is of the Mohammedan faith and continues to be known by the generic Spanish name of *Moros*, literally Moors. Racially these are like other Filipinos, with a strain of pure Malay and a slight dash of Arab blood, but their religion marks them off as the peculiar people of the Archipelago.

The Filipinos, properly so-called, form some seven-eighths of the total population. Their subjection, for some three centuries, to the tutelage of Spanish civil authority and Spanish missionary priests has resulted in giving them a civilization which has unquestionably started them toward a destiny different from that of almost every other race of the Orient. It is this people on whom the great experiments of the present American *régime* are being tried.

Like most parts of the East there is in the Philippines a considerable admixture of many other races besides the predominant ones. None of them appreciably affect the racial make-up of the country. The most numerous of these aliens are the Chinese, the Japanese, and natives of continental India (generally known locally as "Bombays"). The Chinese do most of the internal commerce of the Islands.

Among agencies working for the peace of the people which have accomplished much solid good in the Philippines must be ranked the Philippine Constabulary. This is a body of between 4,000 and 5,000 officers and men. Another very important department, the Bureau of Public Works, has general control of nearly all activities which its name implies. It is hardly necessary to expatiate on all that good roads and bridges mean to commerce, that irrigation means to agriculture, and that artesian wells mean

to the public health, in a country like this. Starting with two artesian wells in 1905, their numbers have grown by leaps and bounds. Where artesian well water is abundant the death rate has fallen noticeably, in some cases as much as 50 per cent.

There are now in the Philippines 2,300 miles of first-class roads, built in a most substantial manner and maintained throughout the year by a system of constant inspection and repair. Second and third class total 3,300 miles more.

The system of public instruction comes under the general control of the Bureau of Education. To attempt even a cursory outline of the work that is being done would be impossible here but the continually increasing number of the younger people who speak a fair amount of English is the best proof of its efficiency. The Bureau of Printing gives many young Filipinos an excellent training in a trade for which their inherent manual dexterity admirably fits them. The Postal Savings Bank, older than that of the U.S. by some years, has deposits of more than P.3,000,000. The value of the work done by the Bureau of Health is incalculable. Smallpox, once a fearful scourge, is kept within very moderate bounds; the bubonic plague has been eradicated; cholera epidemics are much rarer and less severe than formerly; tuberculosis, which was reaping greater harvests than many of the more dreaded diseases, is now being scientifically combated in open-air sanitariums; war is being waged on the malarial mosquito; and finally leprosy is being fought by the segregation of those afflicted on the little Island of Culion.

RESOURCES.—By far the most important part of the resources of the Islands lies in their agricultural products, which yield about 95 per cent. of the total exports.

The whole land area of the Archipelago is approximately 120,000 square miles, of which the area susceptible of cultivation is roughly estimated at from 15,000,000 to 30,000,000 acres, the largest part of which is in the public domain and has as yet hardly been touched. No less than 95 per cent. of all the exports are made up, either in raw or manufactured form, of copra (the dried meat of the coconut), sugar, *abacá* (manila hemp), and tobacco; and these, with the chief food products which are not exported—rice, Indian corn, and camotes (a variety of sweet potato)—form a very large part of the total agricultural production of the Islands.

Agriculture has shown great increases in late years, the statistics for 1911 and 1918 (fiscal years) being as under:—

1911

	Acreage.	Quantity	
Manila hemp	1,193,586	370,594,717	pound
Sugar	201,425	335,805,800	,,
Tobacco	132,458	61,614,912	,,
Rice	2,944,588	1,160,718,800	,,
Indian corn	1,432,027	9,244,707	bushel
Coconut trees		33,000,000	
Coconut copra		253,309,808	pound
Coconut oil		1,847,476	gallon

1918

	Acreage.	Quantity	
Manila hemp	1,221,125	402,500,000	pound
Sugar	464,000	848,000,000	,,
Tobacco	—	—	
Rice	3,062,500	2,120,753,767	litres
Indian corn	942,000	473,000,000	,,
Coconut trees		60,244,000	trees
Coconut copra		410,000,000	pound
Coconut oil		159,000,000	,,

The statistics of live stock at the beginning of 1911 were: Horses, 215,674; cattle, 242,398; carabaos, 713,121; hogs, 2,066,605; goats, 407,087; sheep, 88,760.

The principal manufactures on a large scale are cigars, cigarettes, alcohol, and distilled liquors. The total number of cigars manufactured during 1911 was 228,251,291, and the total number of cigarettes 4,094,028,988. The output of the registered distilleries was 10,471,299 proof litres (10,994,864 quarts). The returns for the tax on manufacturers whose goods are not subject to a specific tax and who produce more than P.500 worth a year give a total output for such manufacturers of P.3,095,783.70.

Good glass sand exists in several deposits well located for working, and there are indications of the existence of valuable stores of petroleum and natural gas.

A very substantial portion of the natural wealth of the Philippines lies in their forests. The total stand of merchantable timber is roughly estimated at 200,000,000,000 board feet, and the whole of the virgin forest area covers about 40,000 square miles, or approximately one-third of the total land area of the Islands. In addition there is perhaps half again as much territory covered with second-growth forest.

Logging is comparatively easy and cheap in the forests close to the beaches and large rivers; but these are rapidly being destroyed by small operators for local use. In the future most of the commercial lumbering must be done from five to twenty or thirty miles inland, where short railroads will be necessary. The public forests of the Philippines are under the control of the Bureau of Forestry, which develops them under a license system. For tracts not exceeding 2,500 acres exclusive licenses may be granted if the applicant can show that he possesses the will and the resources actually to develop the area. For larger areas the license is let to the highest bidder. Many smaller cutters operate under yearly licenses, mainly for local use. The stumpage charged by the Government ranges from P.0.50 to P2.50 per cubic metre.

The removals of forest products for the fiscal year 1911 were as follow: Timber, 78,278,032 board feet; firewood, 10,029,176 cubic feet; dyewood, 3,794,746 pounds; tanbark, 4,427,247 pounds; gum mastic, 1,556,570 pounds; rattan, 10,106,041 pounds; gutta-percha, 254,483 pounds; and pitch, 275,605 pounds.

MINERAL RESOURCES.—The mineral resources of the Philippines do not as yet furnish a very large part of the total commercial production. Those which have so far been in some degree developed are gold and coal, and, on a smaller scale, copper, iron, silver (found alloyed with the gold), and manganese.

The value of the mineral production for the year 1910 was Gold, P.308,860; iron P 20,023; coal, P.176,255; all other nonmetallic products, P.1,541,031; total, P.2,046,169.

The approximate mineral production for 1917 follows:—

Metallic.		Quantity.	Value. Pesos
Iron	metric tons	50	18,000.00
Silver (Alloyed with gold)	fine grams	125,000	6,250.00
Gold	fine grams	2,119,000	2,816,638.37
Value of metallic			P.2,840,888.37

Non-metallic.		Quantity.	Value. Pesos.
Coal	metric tons	3,200	80,000.00
Clay products	metric tons	—	900,000.00
Lime	metric tons	14,000	270,000.00
Sand and gravel	cu. m.	725,000	700,000.00
Stone	cu. m.	230,000	350,000.00
Salt	metric tons	26,000	780,000.00
Mineral waters	litres	3,350,000	85,000.00
Value of non-metallic			P.3,165,000.00
Grand Total			P.6,005,888.37

IMPORTS AND EXPORTS.—The following figures show the principal imports and exports:

Compiled by the Bureau of Insular Affairs, War Department.

Imports.		Twelve months ending June 1917 Quantity	1917 Value	1918 Quantity	1918 Value
Automobiles	No.	1,043	$750,063	1,646	$1,278,675
United States	,,	1,048	750,063	1,646	1,278,675
Cement	Bbls.	160,654	301,067	182,205	436,453
United States	,,	48	153	2,654	7,669
China	,,	78,630	151,371	114,327	280,040
Hongkong	,,	34,277	70,037	12,028	28,420
Japan	,,	3,695	36,378	33,216	86,739
Other countries	,,	44,004	43,128	19,980	33,585
Coal	long tons	400,585	1,234,404	395,275	1,874,997
United States	,,	—	—	10	231
China	,,	112,150	311,437	101,655	328,103
Japan	,,	287,752	919,708	253,638	1,334,745
Other countries	,,	683	3,259	39,972	211,918
Cotton, & manufactures:					
Cloths	sq. yds.	88,551,096	8,487,753	138,405,699	19,171,262
United States	,,	77,120,928	7,267,399	117,202,749	16,011,733
United Kingdom	,,	6,323,167	700,816	8,777,713	1,368,071
Japan	,,	2,538,259	216,671	9,033,172	1,276,167
Other countries	,,	2,568,742	302,867	3,392,065	515,291
Thread		—	557,714	—	639,648
United States		—	468,760	—	484,936
Other countries		—	88,954	—	154,652
Wearing apparel		—	1,630,293	—	2,350,565
United States		—	522,910	—	743,246
Japan		—	1,003,644	—	1,433,628
Other countries		—	153,739	—	173,691
Yarn	lbs.	2,414,678	752,262	2,510,940	1,269,302
United States	,,	15,086	12,049	2,659	2,178
United Kingdom	,,	312,019	127,725	333,450	243,107
Japan	,,	1,524,975	467,092	1,723,492	853,291
Other countries	,,	562,598	145,396	451,339	170,726

Compiled by the Bureau of Insular Affairs, War Department.

Imports.		Twelve months ending June 1917 Quantity	1917 Value	1918 Quantity	1918 Value
All other		—	$1,124,206	—	$1.874,141
United States ...		—	472,157	—	988,449
United Kingdom ...		—	190,377	—	288,400
Other countries ...		—	461,672	—	597,292
Iron and steel :					
Machinery		—	1,453,447	—	3,233,456
United States ...		—	1,217,560	—	3,039,769
United Kingdom ...		—	157,710	—	50,059
Other countries ...		—	85,177	—	143,622
All other		—	2,687,667	—	6,071,093
United States ...		—	2,102,027	—	5,265,800
United Kingdom ...		—	132,125	—	76,021
Other countries ...		—	453,515	—	729,272
Illuminating oil ...	galls.	11,880.541	1.196,629	9,281,483	1,242,692
United States ...	,,	9,792.549	978,371	6,819.367	906,361
Dutch East Indies ...	,,	2,017,170	211.541	2,416,794	331,394
Other countries ...	,,	70,822	6,717	45,322	4,947
Leather, & manufactures :					
Boots and shoes ...	pairs	546.388	706,116	612,222	1,078,204
United States	,,	395,586	673,554	485,014	1,038,603
Other countries ...	,,	150,802	32,562	127,208	39,401
All other		—	524,375	—	813,383
United States ...		—	466,410	—	675,182
Other countries ...		—	57,965	—	138,201
Meat and dairy products :					
Condensed milk ...	lbs.	10.154.315	770.462	11,999,783	1,377,452
United States ...	,,	5,189,761	388,162	11,284,084	1,300,980
United Kingdom ...	,,	2,528,489	193,778	143.206	14,816
Other countries ...	,,	2,436,065	188,522	567,493	61,656
Fresh beef	lbs.	5,115.505	479.219	8,385,679	804.341
United States ...	,,	48,219	7,398	4,484	1,304
Australasia	,,	1,576,009	157,615	1.056,279	112,908
China	,,	3,491,277	314,206	7,324,916	690.129
All other		—	937,210	—	1,235,726
United States ...		—	366,285	—	449,157
Australasia		—	182,369	—	231,682
Other countries ...		—	388.556	—	554,887
Paper, & manufactures		—	1,422.255	—	1,992,198
United States ..		—	902,924	—	1,060.259
France		—	145.905	—	241,770
Japan		—	133,622	—	399,705
Other countries ...		—	239,804	—	290,464
Rice	long tons	177,070	6,470,909	156,616	6,167,015
United States ...	,,	—	10	—	2
French E. I. ...	,,	170.424	6,130,517	149,295	5,665.564
Spain	,,	6,429	329,542	7,118	485,507
Other countries ..	,,	217	10,840	203	15.942
Wheat flour	Bbls.	268.611	1,502.603	364.695	2,667,736
United States ..	,,	118.066	599,530	1,518	14,214
Australasia	,,	79,179	493,470	319.175	2,343,723
Japan	,,	71,215	403,931	43,572	305,773
Other countries ...	,,	151	872	430	4,026
All other articles ..		—	13,944,424	—	28,184,957
United States ...		—	10,320,834	—	16,530,221
Other countries ...		—	8.623,590	—	11,654,736
Total imports ...		—	$51,983,278	—	$83,763,290

Exports.		Twelve months ending June 1917 Quantity	1917 Value	1918 Quantity	1918 Value
Manila Hemp...	long tons	132,477	$30,259,550	158,211	$54,493,970
United States ...	,,	69.868	17,037,191	83,972	32,418,469
United Kingdom ...	,,	39,143	6,776,087	55,160	14,682,401
Japan	,,	9,715	3,581,832	11,412	5,353,514
Other countries ...	,,	13,751	2,864.440	7,667	2,039,586
Cocoanut oil	lbs.	56,013,897	6,500,963	158,986,263	18,552,249
United States ...	,,	54,184.214	6,258,717	158,751,966	18,531,746
Other countries ...	,,	1,829,683	242,246	234,297	20,503
Sugar	long tons	234,308	13,729,083	225,428	13,304,770
United States ...	,,	98,696	7,131,473	78,713	6,512,948
China	,,	33,319	1,678,543	35,306	1,721.309
Hongkong	,,	72,413	3,420,548	76,438	3,430,819
Japan	,,	13,080	662,172	34,674	1,620,972
Other countries ...	,,	16,800	836,347	297	18,722
Copra	long tons	69,382	6,942,093	103,887	9,527,241
United States ...	,,	46,775	4,646,735	88,419	8,172,252
France	,,	10,805	1,137,030	4,447	394,513
Spain	,,	8,534	874,987	10,504	918,299
Other countries ...	,,	3,268	283,341	517	42,177
Cigars	thous.	219,039	3,459,824	318,564	5,708,718
United States ...	,,	148,112	2,714,006	224,174	4,653,111
Australasia	,,	4,082	68,254	6,168	107,631
British E. I. ...	,,	8,624	76,065	10,414	106,156
China	,,	19,086	235,428	29,527	366,620
Other countries ...	,,	39,135	366,071	48,281	475,200
Unmanufac'd tobacco.	lbs.	30,634,136	2,630,480	41,269,433	4,954,298
United States ...	,,	3,614,166	537,151	7,466,544	1,740,159

Imports.		Twelve months ending June 1917 Quantity	1917 Value	1918 Quantity	1918 Value
Unmanufac'd tobacco :—					
France	lbs.	5,615,606	$550,753	7,406,927	$774,547
Spain	,,	14,212,088	904,773	24,986,619	2,219,335
Other countries ...	,,	7,192,276	637.803	1,409,343	220,257
Maguey ..	long tons	14,725	2.044,907	10,992	1,904,131
United States ...	,,	11,177	1,587,227	3,773	673,486
United Kingdom ...	,,	1,271	175,130	4,553	810,044
Other countries ..	,,	2,278	282,550	2,666	420,601
Knotted hemp... ...	lbs.	798.698	539,054	1,253,126	1,093,337
United States ...	,,	40.752	25,508	417,011	364,961
France	,,	473,749	305,841	172,083	196,804
Italy	,,	53,664	26,800	197,393	158,661
Switzerland ...	,,	198.390	162,432	263,560	202,038
Other countries ...	,,	32,143	18,473	203,079	170,873
All other articles ...		—	5,609,421	—	7,075,897
United States ...		—	3,187,385	—	3,943,101
Other countries ...		—	2,422,036	—	3,132,796
Total exports ...		—	$71,715,375	—	$116,614,611

DISTRIBUTION BY COUNTRIES.

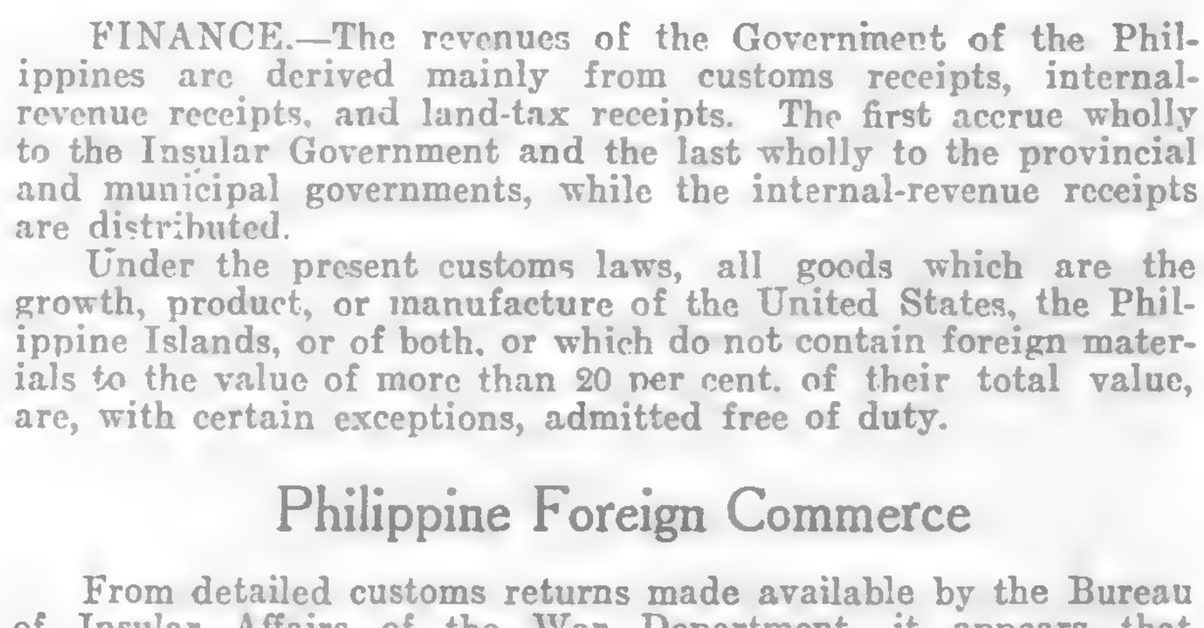
Countries	Imports Twelve months ending June 1917	1918	Exports Twelve months ending June 1917	1918
United States ...	$27,516,556	$49,799,229	$43,125,393	$77,010,233
Hawaii	301.294	202,679	129.670	182,613
United Kingdom ...	2,671,884	3,065,146	7,677,218	15,666,764
Australasia	1,009,365	3,026,806	789,445	1,111,404
Belgium	27,866	34	—	—
British East Indies...	1.041,244	1,438.129	961,929	1,036,486
China	3,348.943	5,862.075	2.199,763	2,435,315
France	683.693	720.913	2,187,450	1,412,692
French East Indies...	6,393,719	5,758,876	130,478	737,196
Hongkong	145,748	123,025	4,834,445	5,096,921
Italy	91,720	96,672	43,129	168,011
Japan	5,589,275	10,660.672	4,975.416	7,863,165
Netherlands	141.930	56,892	439,524	—
Spain	839,232	643,554	2,001,918	3,233,201
Switzerland	448,462	350,092	162,432	202,038
Other countries ...	1,432,347	1,958,496	2,057,165	458,572
Total	51,983,278	83,763,290	71,715,375	116,614,611

FINANCE.—The revenues of the Government of the Philippines are derived mainly from customs receipts, internal-revenue receipts, and land-tax receipts. The first accrue wholly to the Insular Government and the last wholly to the provincial and municipal governments, while the internal-revenue receipts are distributed.

Under the present customs laws, all goods which are the growth, product, or manufacture of the United States, the Philippine Islands, or of both, or which do not contain foreign materials to the value of more than 20 per cent. of their total value, are, with certain exceptions, admitted free of duty.

Philippine Foreign Commerce

From detailed customs returns made available by the Bureau of Insular Affairs of the War Department, it appears that Philippine foreign trade in the year ending June 30, 1918, reached an unparalleled value and exceeded the figures of the previous year by over sixty per cent. in both imports and exports. But in view of the phenomenal increase in prices during the period, values furnish even a less trustworthy index of the trade activity than in previous years. The volume of trade both inward and outward



TYPICAL STEEL PIER, MANILA

indicates marked activity and a generally prosperous year. In the widely diversified import trade, there was a general improvement over the volume of the previous year, while in exports still larger quantities were generally recorded, under production conditions already prosperous and materially stimulated by the war.

Total imports amounted to $83,763,290, and of the thirty two million dollars increase half was in cotton cloths and the miscellaneous iron and steel trade. Imports of cotton textiles were heavy throughout the year and reached by far the largest quantity ever recorded. Over eighty per cent. was from the United States, and the interesting feature in the small residue was the large development in Japanese shipments. These were nearly four times as large as in 1917 and about equalled the British trade. The iron and steel trade more than doubled in value. Large increases in values of oil-extracting and sugar machinery testify to the further development of these important industries.

Exports for the first time passed the hundred million mark and amounted to $116,614,611, or more than double the prevailing figures of the pre-war period. In the enormous forty-five million dollar increase over the total of 1917 hemp and coconut products were the chief factors. There was a notably larger production of hemp, with an increase in exports from 132,477 long tons in 1917 to 158,211 long tons, the largest quantity since 1911.

Production in the coconut industry assumed enormous proportions as shown by much larger exports of copra than in 1917 or 1916, and in addition there was a two hundred per cent. increase in exports of coconut oil, local manufacture of which has been rapidly developed to such proportions that more than half of the copra produced is now being converted into oil. Both products are now almost wholly marketed in the United States, the islands supplying about sixty per cent. of American imports of oil and about half those of copra.

The condition of the sugar industry was less satisfactory. Exports amounting to 225,428 long tons, were slightly below those of the previous year, while the average price remained virtually the same. In spite of American needs the tonnage situation for this distant source of supply resulted in reduced shipments to the United States. Centrifugal sugar was first made the subject of separate official report beginning January, 1918. Of the total exports for the latter half of the year amounting to 121,290 long tons, 25,006 long tons was centrifugal.

The cigar trade amounted to 318,564,000, and the striking increase of nearly fifty per cent. in the number exported is doubtless attributed in a large measure to the continuation of well directed efforts of the Philippine government to improve the standard of the Philippine cigar and popularize it in the American market.

Among minor exports there was a large increase in the quantity of cordage and of knotted hemp, both of which for the first time find a market of some importance in the United States. Philippine embroideries continue to increase in popularity with the American woman, and reached a value of over two million dollars.

In the distribution of the great increases in the trade of the year by countries, the United States, Japan, China, and Australia shared chiefly in imports, while the United States and the United Kingdom led in exports in consequence of their prominence in hemp and coconut products. The commercial interdependence of the United States and the islands further increased with another year of war and restricted trade movement, practically sixty per cent. of all imports being American goods, while two-thirds of all exports found an American market.

The principal cities and commercial ports in the order of their importance are Manila, Iloilo, Cebu and Zamboanga. Manila is situated on the island of Luzon, Iloilo on Panay, Cebu on the island of that name, and Zamboanga on Mindanao.

Manila

Manila is the heart of the Philippines and the most important city. There are three Manilas; the city of the primitive Malay, with its nipa shacks, its carabaos, ancient fishing boats, and numerous other traces of the period of Malay domination; the city of the Spaniard, the adventurer, merchant and crusader of the sixteenth and seventeenth century, with its half-Moorish domestic architecture, the walls, churches and convents; and, finally, the Americanized Manila of to-day, the town of macadamized roads, of sewers, waterworks and steel bridges, not ancient or picturesque, but fairly on its way to become one of the handsome cities of the world. Manila lies on low ground, the average elevation of the



PANORAMA OF MANILA

central portion being but two or three feet, and it is through this flat expanse that the Pasig River runs its tortuous course. Mountains running from 3,000 to 5,000 feet in height are seen in the distance. The population of the city is about 272,500, including some 5,500 Americans and numbers of other Europeans and Asiatics.

North of the river is the commercial section—the wholesale and shipping districts near the bay, with the retail section just above and along the river. The northwestern section, comprising the district of Tondo, is the home of the working class and is the most thoroughly Oriental.

The original Spanish Manila is a walled town about a mile long and half a mile wide, with five old gates and several newer gaps cut for streets. Outside the wall is a strip of land reclaimed from the original moat and glacis, which is laid out as athletic-fields. Outside this strip are broad avenues. On the northwest is the ancient Spanish citadel, Fort Santiago, now the headquarters of the Army. Elsewhere about the walls are recreation grounds and sites for government institutions yet under construction. The city presents an endless attraction for the tourist, and those interested in sociology find much interest in the model prison of Bilibid, one of the foremost corrective institutions of the times, which is open to visitors daily. A well-stocked aquarium is another attraction which draws numerous visitors. The effort of the present administration has been to keep intact the old buildings and institutions while unobtrusively adding all the facilities of the Western world in the way of hygiene, education, and expedition of commerce.

Magnificent roads radiated from Manila, and on the streets of the city alone are some 4 000 motor cars. The city has an excellent street car system, but neither motor car nor tramway has yet displaced the ancient vehicles of the Malay population or the Manila carriage, which takes the place of the rickshaw of the Orient.

The port has frequent sailings to Hongkong and ports in China and Japan. It enjoys numerous sailings with ports to the south, including those of Australia. It is distant two days by sea from Hongkong, four days from Nagasaki, five from Shanghai, and 17 to 28 from San Francisco or Seattle, according to the varying speed of the different vessels on the run. A 17-knot boat could make the passage from the Pacific Coast to Manila direct in 15 days, and a line is proposed for early operation which will actually maintain a schedule of 17 days, including a call at Honolulu. At present the large trans-Pacific liners on their outward voyage call first at Japanese ports and then proceed to Hongkong by way of Manila. Two of these make the trip in 17-18 days from Vancouver. Freighters now make the voyage between the Pacific coast and Manila with fewer calls.

The Harbor

HARBOR FACILITIES.—Pier No. 1 reserved for Quartermaster Dept. only. Wharf No. 2 to be constructed. Pier No. 3, length 600 feet; neap tides 30 feet, spring 32 feet, at each side of pier. Wharf No. 4, in course of construction, length 750 feet. Space between Pier Nos. 3 and 5 running north and south (sea wall) present depth 18 feet neap; will probably be dredged to 28/30 feet. Pier 5 length 650 feet, neap 30 feet, spring 32 feet, at each side of pier. Buoys: Government buoy used exclusively for government vessels, except in case of emergency: depth of water 28/30 feet. Spanish Mail and Blue Funnel buoys available to outside ships provided no vessel of either line in port; 28/30 feet Indo-China S. N. Co. Ltd. and China Nav. Co. Ltd. Buoys available to outside steamers up to 2000 tons provided no steamer of either line in port; depth 21/22 feet. The piers and anchorages are protected from bad weather by a breakwater which runs from the mouth of the Pasig River in a semi-circle for a distance of about a mile. The port is promised, in the near future, not only a new pier, larger than pier five, but a reserve depot for fuel oil for supplying vessels in the harbor from pipes connected with the reserve tanks. The Asiatic Petroleum Company has a project for installing up-to-date tanks for the convenience of the shipping in the harbor.

Pilotage: Not compulsory. P25 between sunrise and sunset; P50 between sunset and sunrise.

Port Charges: Tonnage or wharf dues, 12½c P. I. Cy. per net registered ton, or 35c per 1000 kilos on merchandise loaded and/or discharged at ship's option. Customs, stamps on manifest and bill of health P9; if with passengers P10. Light dues, none. Other charges, government piers if used, 1c per net registered ton per 24 hours or part thereof.

Stevedoring: Rates for loading and discharging cargo, 23c per ton plus 25 per cent. Overtime cost per hour, P25 per gang per night. Cost per hour for general labor, P1.75 per man per day. Lighterage, cost per ton, P2.50 per ton. Lighterage, cost per lighter per day, P30/60 according to size.

INVOICE CHARGES.—The Tariff of Invoice Charges as fixed by the Manila Chamber of Commerce is as follows: *Hemp.*—Screwage $1.00 per bale. Landing and shipping, 75 cents per bale. Fire Insurance, ⅛ per cent. per month on first cost, plus screwage. Store Rent, 6 cents per bale per month. Delivery charge to be 10 cents per bale ex ship. Delivery charge to be 20 cents per bale ex godown. Re-pressing of broken bales will be collected from sellers at 75 cents per bale, and re-pressing with sun drying will be collected as P.15 per bale. Parcels delivered exceeding 2½ kilos short weight per bale on the average shall be invoiced back at the rate of P. 1.00 for each 126½ kilos short, with the exception of hemp held in store in Manila for a period of two months or more when average allowed will be four kilos, and that the standard size shall not exceed 12½ cu. ft. (English). If less than 2 per cent. of parcel consists of bales exceeding 12½ cu. ft. buyers shall invoice back at 57 cents per bale, and if more than 2 per cent. of parcels exceed 12½ cu. ft. nothing will be paid for pressing. *Dry Sugar.*—Boat and coolie hire, receiving and shipping, 25 cents per picul. *Wet Sugar.*—Landing, shipping, bags, and bagging, 75 cents per picul. Fire Insurance, ⅛ per cent. per month on first cost. Store Rent, 2 cents per picul per month. *Coffee.*—Receiving and weighing, 40 cents per picul. Bags, packing, and shipping, 40 cents per picul. Fire Insurance, ⅛ per cent. per month on first cost. Store Rent, 8 cents per picul per month. *Copra.*—Receiving, weighing, and shipping, 25 cents per picul Fire Insurance ⅛ per cent. per month on first cost. Store Rent, 5 cents per picul per month. *Sapanwood.*—Receiving, loading, and shipping, 40 cents per picul. *Hide Cuttings.*—Loading and shipping, 30 cents per picul. *Cordage.*—Loading and shipping, 50 cents per picul. *Indigo.*—Receiving and packing in pitched cases,



MANILA HARBOR WORKS WHEN HOSTILITIES BROKE OUT IN 1914

P. 2.50 per quintal. Classification, P. 1 per quintal. Loading and shipping, 50 cents per quintal. *Leaf Tobacco.*—Receiving, packing, and shipping, P. 2.50 per bale of 2 quintals and P. 4.50 per bale of 4 quintals. *Cigars.*—Receiving, packing, and shipping, P. 7.50 per case of 10,000.

MERCHANTS.—Names of Importing and Exporting Firms: Smith, Bell & Co. Ltd., W. F. Stevenson & Co. Ltd., Ker & Co., Pacific Commercial Co., Warner, Barnes & Co. Ltd., Compania General de Tabacos de Filipinas.

Steamer Lines Using the Port.—O. S. S. Co., Ltd., C. M. S. N. Co. Ltd., Ellerman Bucknall. U. K. ports; C. P. O. S. Ltd., T. K. K., P. M. S. Co., O. S. K., Vancouver and San Francisco; C. N. Co. Ltd. and Indo-China S. N. Co. Ltd., Hongkong; N. Y. K., Australian and Japanese ports.

Iloilo

The city of Iloilo, the western entrance to the Visayas, is on the east coast of the Island of Panay, along the lower reaches of the river whose name it bears, and is situated in latitude 11°N., longitude 123°E., about 300 miles from Manila, in a direction a little east of south. It is one of the important port of the Philippines. Its present population, including suburbs, is 47,933. It has direct shipping connections with Europe, the Straits Settlements, China, Japan, and Australia: and there are many boats sailing to other portions of the Archipelago. including a regular service to Cebu. There are two prosperous banking institutions and a number of importing and exporting houses, and the local trade reaches up into high figures. The river has recently been dredged for a distance of about 2 miles. leaving it at a depth of from 16 to 24 feet; and substantial walls have been built along the river, where large steamers can unload. Ships of greater draft anchor in the harbour

Iloilo may be reached from Manila by two routes The most used is via the direct line of contract steamers, maintaining a weekly service; fare, first class, P.27.70. The other method is by boat to Capiz, on the north coast of Panay, for which, besides several noncontract boats without fixed sailing dates, a contract vessel leaves Manila every 10 days. The time *en route* is about 38 hours.

The whole Province of Iloilo, which occupies the eastern and southern portions of the Island of Panay, consists of an extensive plain, splendidly adapted to the production of rice and sugar.

The Panay line of the Philippine Railway Company cuts directly through it, extending as fas as Capiz, the capital of the province of the same name, in the northern portion of the island. Owing to the enlightened methods employed by the company, the railway, though it has been in operation only a short time, has already had a marked influence on the development of agriculture. Several rice and sugar mills have been put in, and one new hacienda, with a modern mill, comprises nearly 3,000 acres. Near the city extensive irrigation works have been constructed.

PORT FACILITIES.—Land locked straits between Island of Guimaras and mainland. Iloilo River, upper reach having extensive wharf and lower reach having Government piers in front of principal warehouses. When the river is dredged there is 18 feet in upper reach and 24 feet in lower reach at low water spring tides. A 15-inch suction dredge arrived at Iloilo in April, 1918, beginning operations in the vicinity of the Forbes Bridge, and during the year approximately 170,000 cubic metres of dredged material has been deposited on the lowlands. In the month of August the dredge dropped down to the mouth of the river and dredged the bar at that point. Owing to the fact that the ladder is but 23 feet 4 inches in length it was necessary to work only at low tide, the approved elevation of the river bed being from 20 to 24 feet below mean low water.



ILOILO WHARF

The Philippine Railway Company's connection with the wharves in Iloilo is by the Panay line which is 73 miles in length, the southern terminal and shops being at Lapus-Lapus on the Iloilo River, a tidal stream 400 feet wide and kept dredged to 24 feet at low water.

The Railway Company terminal has extensive yards and storage tracks, extending along the water front for a distance of about 2,500 feet. The channel has sufficient depth close to the shore for steamers to tie up practically alongside any part of the water frontage. There are located on the railway property three small wooden docks extending out to deep water, and also one concrete dock 150 feet long with 15 ton derrick.

The principal commercial warehouses at Iloilo are located on the opposite side of the river from the railway property and along the river wall.

Imports.—General merchandise for local consumption, including soft goods, hardware, machinery, coal, rice, flour, canned goods, petroleum and gasoline.

Exports are comprised chiefly of sugar, copra, hemp, tobacco and sapan wood.

Names of Importing and Exporting Firms.—Smith, Bell & Co. Ltd., W. F. Stevenson & Co., Ltd., Warner, Barnes & Co., Ker & Co., Pacific Commercial Co., Compania General de Tobacos de Filipinas.

Steamer Lines using the Port.—China Navigation Co., Ltd., trading with Hongkong.

Cebu

Cebu, the metropolis of the eastern Visayas, is the oldest European city in the Philippines and one of the oldest occidental settlements in the East. Discovered by Magellan in 1521, it became a permanent Spanish possession in 1565. It is situated in latitude 10° N. and longitude 124° 10′ E. The province has the largest population of any in the Archipelago and is one of the most thickly inhabited. The city has a good harbor, protected by the Island of Mactan, and the scene which presents itself from the moment of entering the channel between this and the mainland is a very busy one. Extensive port works have been practically completed, and seagoing vessels of large draft are able to tie up along the wharves.

THE CEBU WHARF

Cebu is reached from Manila by two contract and several other lines, a regular line of contract vessels leaving every Wednesday at 4 p.m. and arriving at daybreak Friday; fare, first class, P.30.90

The present population of the city is about 65,000, including a considerable number of Chinese and other Orientals. The American colony, exclusive of the military and transients, numbers about 200, and the British community is also important. There are a number of clubs, of which the Cebu, the United Service, and the Casino are the chief. A franchise has been granted to a street-car company, and a fine modern water system has been in operation several years.

Cebu is a fascinating mixture of old and new and contains a considerable number of places of special interest. The water front is busy with the various activities arising from the city's position as one of the chief centres of the Manila hemp trade. Here is a good opportunity to see the finest grades of this important staple, of which the Philippines have practically a monopoly.

PORT FACILITIES.—Concrete wharf 917 metres long divided into three berths of 300 metres, 367 metres and 250 metres long having a depth at low water at neap tides of 19 feet, 25 feet and 30 feet, and at spring tides 18 feet, 24 feet and 29 feet respectively. The 300 and 367 metre berths have three-pile dolphins as fenders and 250 metre berth has a hard wood fender running the whole length. At this latter berth vessels are able to load and discharge in either Monsoon. The N. E. Monsoon prevails from November to June and the S. W. from July to November.

Imports: Rice, coal, petroleum and general merchandise.

Exports: Hemp, maguey, copra, sugar and tobacco.

Names of Importing and Exporting Firms: Smith, Bell & Co., Ltd., W. F. Stevenson & Co. Ltd., Ker & Co., Macleod & Co., Inc, Forbes, Munn & Co., Ltd. and Pacific Commercial Co.

Steamer Lines Using the Port: China Navigation Co., Ltd. plying between Hongkong and Cebu.

A new concrete wharf 417 metres long, facing northeast and at right angles to the present wharf, is now under construction and when completed will have a depth of 20 feet at low water. With this wharf vessels not drawing over 20 feet will be able to load and discharge without being interrupted by either the N. E. or S. W. monsoons. The Visayan Refining Co., who export cocoanut oil in bulk have a wooden wharf at Opon, Mactan Island, 325 feet long with a depth of water of 31.5 feet at low tide. Vessels of over 5,000 gross tons have loaded oil in bulk at this wharf. The loading facilities are excellent and the last vessel calling there loaded at the rate of 203 tons of oil per hour, in her deep tank.

The necessity of dredging at the north end of Cebu wharf extension has delayed work somewhat on the project. An orange peel bucket used on this work has excavated some 2,000 cubic metres. Since December 4, a sea-going dredger belonging to the Insular Government has been used on this project. The plans call for 94 back piers; of these 66 are now in place and pile foundations have been driven to include the 77th pier. The pile driver has been laid up temporariiy to enable the concrete gang to catch up. The back piers are now being put in at the rate of about one daily.

The Philippine Railway Company's line on Cebu extends 20 miles north and 40 miles south of the City of Cebu. The main Cebu terminal, yards and shops are located several hundred feet in from the water front. The tracks extend down to the water front and along the sea wall, where practically all vessesls arriving at the port discharge and load.

The Cebu dock or sea wall extends for a distance of some 3,000 feet. There is located at a convenient point a 30 ton stiff leg crane with 60 feet boom.

Several of the more important districts of the province are reached by the Cebu line of the Philippine Railway Company, which stretches from the city in both directions along the east coast north to Danao (about 20 miles) and south to Argao (about 40 miles). There are four trains a day each way; time, to Danao. an hour and ten minutes, to Argao, two hours and a half.

Near Danao and the neighboring town of Compostela are the old workings of the first coal mines in the Islands. At Barili, on the west coast, reached by a good road of about 12 miles from Carcar, a station on the Argao line of the railway, are some much frequented hot mineral springs. They are approached by a bridle path of a couple of miles from the main road.

Dumaguete is the second stop on the schedule of the monthly boat to the Moro Province ports. There are also other boats from Cebu and Iloilo, and various noncontract steamers. There is no dock, but the sea is usually calm, and landings easily made. There are no hotels.

Zamboanga

The large Island of Mindanao is the second largest, and potentially perhaps the richest, of the Archipelago and, with the great Sulu Archipelago, which dots the whole sea as far as Borneo with islands, islets, and rocks, is included in the Moro Province. The various ports of the Moro Province are at present reached from Manila by a monthly contract vessel, besides more or less irregular noncontract boats. The former is the same already referred to as making stops at Cebu and Dumaguete and reaches Zamboanga about 48 hours after leaving Cebu.

The first of the administrative districts of the Moro Province in importance and accessibility is the district of Zamboanga, which includes the whole of the western peninsula of Mindanao. The central portion is covered with dense forests containing much valuable hardwood timber. Copra is the principal product, though sugar, cacao, hemp, and rice are cultivated to some extent. Its capital city is Zamboanga, at the extreme end of the peninsula. This is also the capital of the whole Moro Province and one of the most important ports in the Islands. Its present population is about 24,000 and is very cosmopolitan. It consists in the main of Moros and "Zamboanguenos"—that is, Christianized Filipinos of various stocks, of whom a considerable part are the descendants of slaves and captives escaped or rescued from the Moros. Zamboanga was for more than three centuries the rallying point of the Christian forces in their seemingly endless contest with the Mohammedan pirates of these eastern seas. The city has a healthful site and is generally considered by the residents somewhat cooler than Manila. The city has a modern water system, and an electric-lighting plant.



VIEW OF ZAMBOANGA ON THE SHORE OF ZAMBOANGA BAY

The following information regarding the Harbour of Zamboanga has been courteously supplied by Mr. Lawrence Benton Collector of Customs for the port.

The approach to the harbour is made from the east or west through the Basilan straits, in the channel between the Great and Little Santa Cruz Islands and the mainland of Mindanao in Longitude 122.10 East and North Latitude 6.50. The channel is about two miles wide and is swept by strong tides reaching a maximum of four miles an hour. Ships tie up at the wharf, which has capacity for two small or one large vessel not drawing more than 21 feet at low tide. It is a 300 feet concrete and wooden structure extending from the main business section of the city. Communication with the Customs warehouse at the shore end of the wharf through which all merchandise passes, is by a tram line operated by the Arrastre division of the Customs. Other warehouses, privately owned, are available inside the city. A dockyard is under construction by the Zamboanga Dockyards Co., but repair facilities are as yet lacking.

Regular liners calling at Zamboanga are the three vessels of the Nippon Yusen Kaisha, Nikko, Tango and Aki Maru, plying between Japanese and Australian ports. The Straits Steamship Company operates two vessels between Zamboanga and Singapore by way of British North Borneo ports. Ports of the Moro province are reached from Zamboanga by two steamers operated by the Government. Four vessels operated by Fernandez Hermanos link up Zamboanga with Manila and Cebu on the north and with Jolo and Davao in the Moro province.

Zamboanga is the seat of the Government for the Department of Mindanao and Sulu. All the head department offices are located here. As a shipping point, it is the general distributing port for all imports and exports for the Island of Mindanao and, in connection with Jolo (also a port of entry) for the Sulu Archipelago. The agricultural resources are being rapidly developed and the population being increased by immigrations from the northern Philippine Islands. Large numbers of Japanese immigrants have been settling in the department, principally in the districts around the Gulf of Davao.

The principal products are hemp, copra rubber, almaciga, rice, pearl shells, lumber, seafood products and cattle. The imports are rice, cotton textiles, cotton yarns, agricultural machinery, coal, canned foods, etc.

Local Steamship Agents.—W. F. Stevenson & Co., Francisco Barrios, Luis Montojo, Henry E. Teck, Ohta Development Co.

Principal Importers: A. Broad, J. J. Wilson, Port Banga Lumber Co., Francisco Barrios, Wee Ah Yu, Kwong Me Lung, John Spirig, W. F. Stevensen & Co., Atkins, Kroll & Co., Torrejon, Jurika & Co., Pacific Commercial Co., C. Boon Liat, Heap Chee, Chin Tai & Co., Guan Lee, Guan Choon, Heap Hoe, Yap Teng Choon, On Woh, Ong Chua, Hock Huat.

Principal Exporters: W. F. Stevenson & Co., Atkins, Kroll & Co., Port Banga Lumber Co., Basilan Lumber Co., Port Lebak Lumber Co., Pacific Commercial Co., Francisco Barrios, Zamboanga Oil Co., C. Boon Liat, Heap Chee, Chin Tai & Co., Guan Lee, Guan Choon, Heap Hoe, Yap Teng Choon, Hock Huat, Ong Chua.

INDO-CHINA

The history of Indo-China since the advent of the foreigner is plentifully besprinkled with stories of wars, uprisings against authority, internicine strife and conflicts between the French and the Chinese Governments, the latter presenting innumerable obstacles against a closer understanding with the people of this



SAIGON—PALACE OF GOVERNOR GENERAL

rich land. French associations with Indo-China date back to the time of the unfortunate king of France, Louis XVI, who, when the revolution broke out which cost him his throne and head, undertook to send certain naval forces to assist King Gia Long, who had been deposed, on the latter's promise that he would cede in perpetuity the port and territory of Hansan and the adjacent islands of Faifar and Haiwen. The French revolution put a temporary end to the project, but two years later, in 1789, the French landed a considerable force which assisted Gia Long again to sit upon the Throne of Annam. His restoration was followed by five years of strife and war before Tonkin would acknowledge allegiance. For this assistance Gia Long was a life-long debtor to France, whose citizens he treated with the utmost respect and consideration. His death, however, released the hatred of his successors who persecuted French and Spanish missionaries, ordered them to leave the country, and killed them on refusing. These proceedings were not long in calling forth effective remonstrance; a Franco-Spanish fleet bombarded Tourane and stormed Saigon.

From this time onward conflicts between the French and the native governments were almost continuous. In 1863 Admiral de la Grandiere was appointed Governor of Cochin China, which was ceded to the French by Emperor Tu Doc following the defeat of the Annamese, and he undertook the exploration of the Mekong. In 1867 those provinces left to Annam were annexed. Peking sent troops to the assistance of Annam, claiming suzerainty, and the French were compelled to seek reinforcements to stand at Tonkin. A fresh treaty with Annam was the outcome, and the King recognized the sovereignty of France over all the territories she occupied and stipulated the withdrawal of Chinese troops. China, upon news of this treaty reaching Peking, declared that Annam had no right to conclude such a treaty, but not being willing to back this opinion by resort to arms, matters were allowed to drift Eventually it required the presence of an army of 25,000 French before the question was settled. Meantime France's military expenditure had grown enormously and even so late as 1901, the short-sighted rule of previous governors who were of opinion that Tonkinese and Annamese were irreconcilable enemies, resulted in upheavals only calmed by the perspicacious action of M. de Lanessau, a Paris deputy, who pacified the country by bringing about an understanding between the opposing factors. Military expenditure was gradually reduced and to-day France is pursuing a policy, the chief principle of which is to conciliate the races inhabiting Indo-China, granting liberty of action in religion and government as far as possible. Western education is given, native schools have been established and now number over six hundred, catering for 40,000 pupils; the medical service has been organized to fight the diseases of the country and everything possible is done for the people and the country.

Administration of the Territories

Such in brief is the history of the country since it first interested France. To-day it is one of the richest of French possessions; it is wealthy in agriculture; its industries are being scientifically and systematically fostered and rubber planting has been undertaken of recent years. Administrative organization differs in each of the five states now under French rule. In Cochin China, villages are governed by councils of twelve notables, generally the richest and best educated villagers. Villages are grouped into cantons under a chief and deputy who are appointed by the Government after competition between candidates chosen by the villagers. Cantons in turn are classed into provinces under a French resident. He is responsible for all government works and education and is under the direct authority of the Lieutenant Governor.

In Tonkin the French take a more active part in local administration, where the provincial residents are real heads and not, as in Annam, controlling agents.

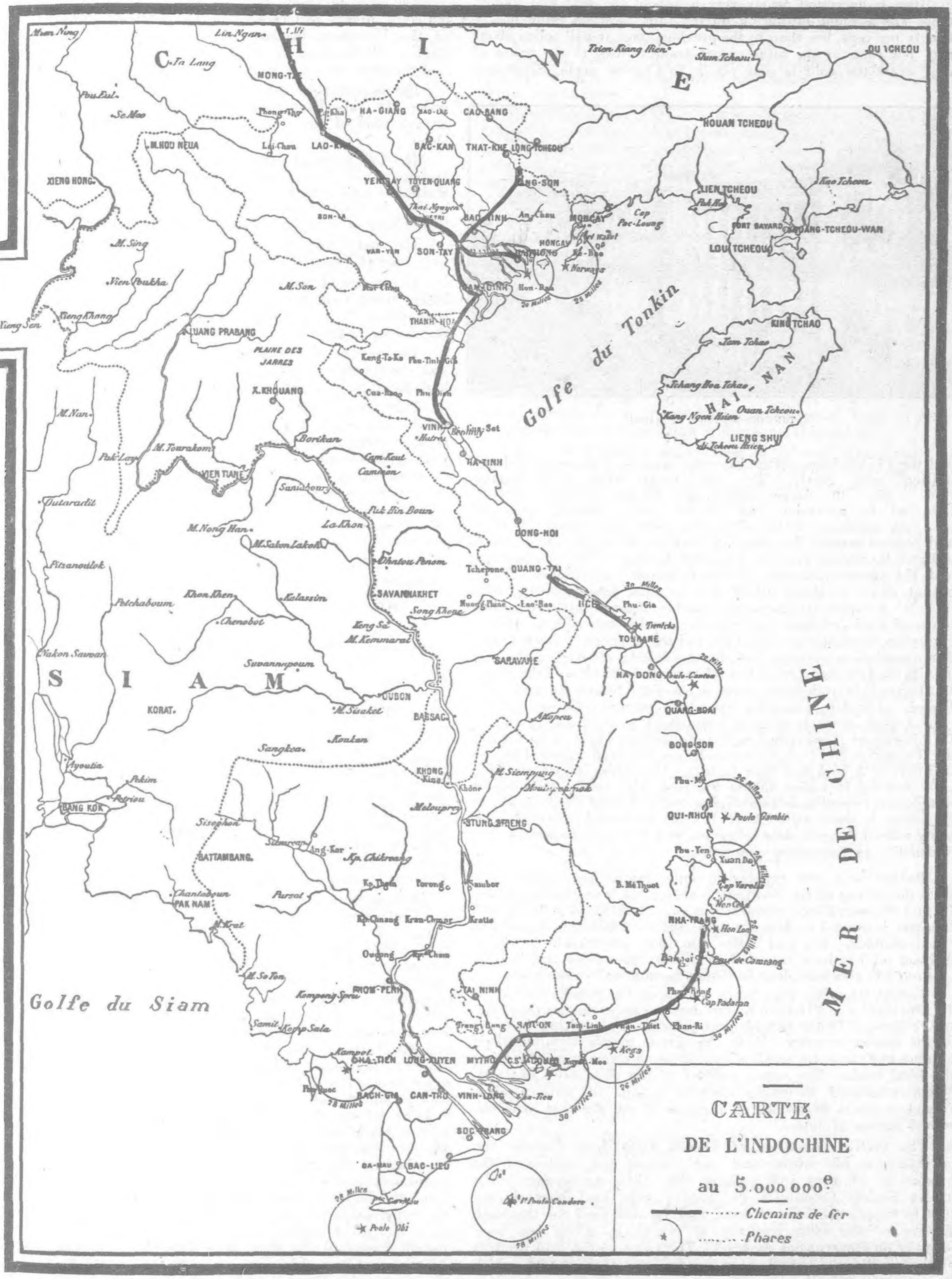
In Cambodia the King is head of the native adminstration and is assisted by Provincial governors. A municipal council governs the villages and the Resident Superior (French) is president of the Council which looks after public works and departments and drafts the budget. In Laos, much the same form of Government is adopted as in Cochin China, the French Resident Superior being assisted by one commissioner in each province. The same may be said of Annam, but here the Emperor is assisted by a secret council or Comat composed of seven ministers—interior, finance, rites, public works, justice, war and education.

Commercial Aspects

French Indo-China in its relation to commerce may be divided into three economic divisions—(1) the territory tributary to Saigon, except for the fisheries of the coast and interior lakes, one of the great rice regions of the world; (2) the region tributary to Haiphong, devoted to agriculture, mining and manufacturing; (3) Central Annam, mainly agricultural but not a great rice growing region.

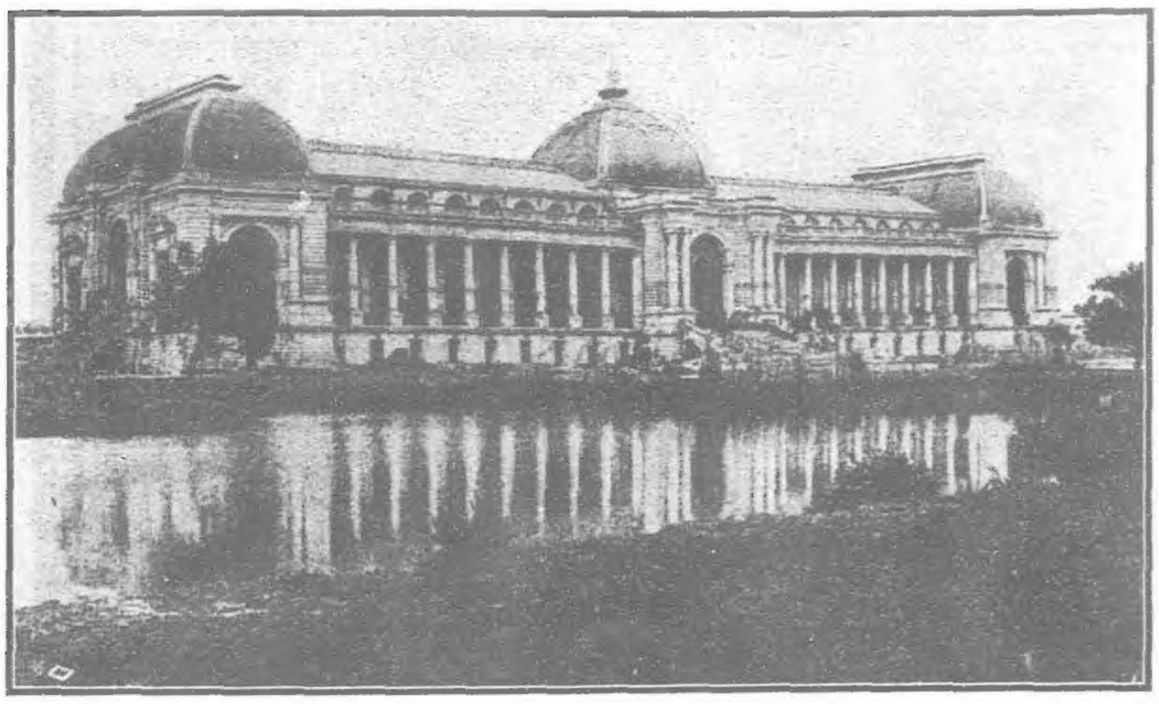
Situate as the country is to the south of China and bordering Siam, it enjoys a climate which though tropical is less so than Singapore or the Straits, while the North is open to extremes and its richness in agriculture is attributable to its varied climates. Maize, cotton, tea, rubber are among the chief products raised after rice, while hides, silk, leather, paper and woven cotton are prepared for export. Sugar refining is a growing industry and within the past few years refineries, containing the latest machinery, have been erected, while the manufacture of cotton goods is yearly increasing. The total trade of Indo-China is about $100,000,000 gold annually. Of the total imports France and colonies send about fifty per cent., Asiatic countries forty per cent., and European countries, other than France, about ten per cent. The imports from Asiatic countries are articles produced in those countries and intended for Asiatic consumption. Tariffs so protect imports from France and her colonies that successful competition is almost impossible. Of the ten per cent. of the trade done by other European countries, one third consists of kerosene from the United States.

It will no doubt be of interest to enter into more detail of the countrys' products, but the absence of later figures than those of 1916 precludes any intimate discussion of the trade during the past two years, but basing remarks upon the increasing productions noted during the years immediately prior to the war and during the first two years of its progress, the trade of French Indo-China must have gone ahead to a great extent, but not so much as it would have enjoyed had the war not taken place.



MAP OF INDO-CHINA—SHOWING PORTS, RAILWAYS, AND LIGHT-HOUSES

Rice is harvested nearly very month of the year and though there was a slight falling off during 1916, the crop being nearly twenty per cent. less than in the previous year, it still forms about fifty per cent. of the total export trade. Rice to the value of over $4,000,000 gold is sent yearly to Chinese ports, Singapore



TONKIN—MUSEUM AT HANOI

and the Philippines. Often have the exports of rice exceeded one million tons yearly. The rice mills were busy during 1916. The 10 large mills at Cholon, near Saigon, were all in operation and turned out 1,250,000 tons of rice, an increase of 15 per cent. over the output in 1915 and approximately the same as that in 1914. The three small mills at Haiphong were less occupied, because of the smaller crop and the greater activity of the rice-alcohol distilleries. Their output was only about 100,000 tons in 1916, against 260,000 tons in 1915. A constantly increasing number of small mills in various parts of Cochin China hull rice for local consumption. Hides, cinnamon, cardamons, aniseed oil and tea are next in importance. The exportation of hides has shown a falling off during the war despite the fact that France has taken more for the use of the army. But before this trade there seems an excellent future, for under the French up-to-date tanneries have been erected, eliminating the slipsod work which is so great a drawback to the trade in China. In this respect it is interesting to note that the plant of La Société des Tanneries de l'Indo-Chine at Hanoi has been enlarged by the addition of a boot and shoe factory. Cinnamon shipments have been showing increases during the past few years, but export restrictions caused a decline during 1917. Nearly all the trade in cinnamon is done with China. Sugar, as stated above, is now being refined in up-to-date refineries, and France is importing this commodity in increasing quantities.

Rubber is a new experiment only having been undertaken since the advent of the twentieth century, but it is growing apace. In 1914 shipments only amounted in value to $153,000 gold, in 1915 this was increased to $310,000 gold, while in 1916 this figure was again doubled. Tea and coffee also show remarkable increases. Aniseed oil has been exported in greater quantities and heavier business has also been done in castor, peanut and coconut oils.

Industrial.—The four large plants of La Société Française des Distilleries de l'Indo-chine ran day and night during practically the whole of 1916 to furnish alcohol for the ammunition factories of the mother country. With the larger plants shipping their product to France, the smaller distilleries were very busy supplying the local trade. The entire product of the distilleries of Indo-China amounted to nearly 2,000,000 gallons of pure alcohol, valued at about $8,000,000, an increase of 100 per cent. over the record figures of 1915.

The textile industries of French Indo-China include the manufacture of cotton and silk thread and cloth and the production of mats and matting. The three cotton-yarn mills of La Société Cotonnière du Tonkin were kept busy during 1916 to supply the local demand and furnish woof for the cloth factory of the same company at Namdinh, which has been running on Government contract. The value of the 1916 product of these mills was considerably greater than that of 1915, which in turn exceeded all previous years.

The silk industry was not so fortunate. The damage to mulberry plants and cocoons by the floods of 1915 and the loss of the European market for raw silk seriously affected the Tonkin silk-winding mills. The silk-cloth factories of Namdinh and Quinhon were idle during most of the year.

The manufacture of Tonkin mats has been declining for several years. In this Protectorate as well as in Cochin China the greater part of the reed product is exported as matting or as fibres.

The low price of hides has helped the Chinese tanneries of Haiphong and Cholon and most of their products exported from Haiphong and Saigon have been shipments of tanned or curried leather to China. The plant of La Société des Tanneries de l'Indochine at Hanoi, greatly increased its output in 1916.

The paper mill at Dap-cau supplied the local market. The pulp mill at Vietri remained inactive.

The soap and vegetable oil factories at Haiphong and Saigon had a prosperous year on account of the removal of European competition from the soap market, the low price of copra, and the increased demand for vegetable oils.

The output of the albumen factories of Hue and Quinhon was somewhat less than that of 1915 owing to loss of markets, high freights, and lack of tonnage.

The three match factories of Tonkin and northern Annam, which have practically captured the local trade, had their usual good year in 1916. The sawmills and woodworking plants were slightly handicapped by high freight rates for export and lack of construction work at home. The output of the teak mill near Saigon was somewhat larger than that of 1915, which had been a record year. On the other hand, the large sawmill near Pnompenh was nearly inactive, chiefly because of repairs and the mobilization of European operatives.

MINING DEVELOPMENT.—As regards minerals coal plays an important part. Despite increased local consumption the export of coal ranks third in exports having passed maize and hides and leather.

The coal deposits of Tonkin are rich and extensive, but only those claims have been exploited whose surface outcroppings make possible the use of native hand labour in the open air. Shafts and mining machinery are almost unknown in Tonkin. The market value of Tonkin's coal output during 1916 probably exceeded $5,000,000. The coal mines of Tonkin at present under exploitation comprise four groups along the coast just north of Haiphong. Beginning at the northeast these groups are successively (1) Kebao, (2) Hongay, (3) Port Courbet and (4) Dong Trieu. About ninety per cent. of the coal output of Tonkin comes from the Hongay mines. These mines are owned and operated by the Société Francaise des Charbonnages du Tonkin, a French company founded in 1888, with its headquarters at 5 Rue Caumartin, Paris. This company has a capital stock of 4,000,000 francs and at present exploits three concessions—Nagotna, Hatou and Campha.

Hongay coal is a form of anthracite but a somewhat imperfect form, much more friable and less combustible than Pennsylvania anthracite As it comes from the mines to the sheds it is sorted into three classes—lump, screen and dust. The extreme friability and low combustability of this coal except when mixed with soft coal, as well as the convenience of the briquet, make the artificial briquet the favourite form for commerce and for consumption on railways and steamers, and lump and screen coal are often pulverised for this purpose. These briquets consist of Hongay coal, about 71 per cent., Japanese soft coal about 20 per cent., and *brai* (a mixture of tar and pitch) about 9 per cent. The coal is crushed in a pulverising mill, the hot *brai* is added and the mixture is formed into briquets of 5½ to 6 kilos (12 to 13 pounds). The efficiency of these briquets is said to be 95 per cent. of that of the best Cardiff coal. The effect of the war on the Hongay coal-mining industry has been to increase the exportation of lump coal and diminish the manufacture of briquets. The uncertainty of financial conditions and lack of tonnage during the latter part of 1914 brought the exportation of coal to a temporary standstill but the high price and great demand for coal in Europe and the high cost of freight have had the effect of withdrawing European coal from Asiatic markets and have correspondingly increased and extended the market for Hongay coal.

The following is a list of coal mines in Tonkin, and their exploiters:—

Mine.	Present Exploiter.	Date of concession.
1. Kebao	...Société civil du domaine de Kebao	1888
2. Hongay	...Société Française des Charbonnages du Tonkin	1888
3. Schoeeelin	...Société Miniere et Industrielle de l'Indo-Chine	1890
4. Saladin	...Société Miniere et Metallurgique de l'Indo-Chine	1894
5. Espoir	... ...	1905
6. Edouard	...M. Salle	1905
7. Chacha	...Société Miniere et Industrielle de l'Indo-Chine	1907
8. Francais	...M. A. Bernies	1907
9. Hien ...	...M. A. Bernies	1911
10. Paul ...	...M. Ferrand	1911
11. Marcelle	...M. A. Bebelman	1911

OTHER MINERALS.—The value of zinc exports advanced from $463,000 in 1914 and $836,500 in 1915 to about $1,000,000 in 1916. Zinc is increasing in importance among the exports of this district. In 1916 most of it went to Japan. About 12,125 tons was sent to the United States.

Cement exports, which amounted to $474,000 in 1914 and $614,000 in 1915, probably exceeded $750,000 in 1916.

It is difficult to estimate the value of the tin and tungsten ore shipped from Saigon. The customs figures give the amount exported in 1914, 1915, and 1916 as 216,397, and 331 tons, respectively. Even if these figures are exact, the export value can not be calculated precisely because of the varying quality of ore. The customs value of this ore is placed at 600 francs a ton—very low for the present price of the metal. Perhaps $175,000 would be a fair estimate of the market value in 1916.

The amount of antimony exported in 1916 was 785 tons, against 630 tons in 1915 and 883 tons in 1914. Th customs value in 1916 was about $30,000.

Salt and gold and silver ore are exported from Tourane. The value of salt shipments, fell from $93,460 in 1915 to $59,393 in 1916. The exportation of gold and silver ore amounts annually to between $50,000 and $100,000.

Trade and Trade Centres

Prior to the European war the principal German and French houses gave long credits thirty, sixty or ninety days. This is impossible now, and purchases made abroad are made cash against documents. Quotations are usually c.i.f. Saigon. As it is not easy for the exporter to realize these terms, on account of the lack of direct steamer connection between American ports and Indo-China, local merchants usually accept c.i.f. Manila, Hongkong or Singapore, all of which ports have intermittent sailings for Saigon, while some purchases urgently needed are known to have been made f.o.b. American ports. The Saigon business man is usually unwilling to assume all the risk.

Imports into Indo-China fall under three categories (a) Merchandise received directly from abroad and paid for outright; (b) goods, sold through local agents received direct from foreign countries, and (c) articles bought from actual representatives or agents of foreign concerns established in the large far eastern commercial centres, such as Honkong and Manila.

In view of war conditions, with the resulting scarcity of supplies and high prices, the last method would appear to be the one to employ as important agencies or branch offices can be well stocked, can make more acceptable quotation to Indo-Chinese houses (c.i.f.) and are usually in a position to canvass the field through travelling salesmen. During the past few years American salesmen have placed substantial orders due largely to the fact that they were in personal touch with buyers and were in a position to submit samples. The second method will be a good one to employ when prices are normal and freights lower. At present with local prices and restricted competition the high cost of foreign merchandise is inconsequential and anything is saleable.

The principal cities of Indo-China are Saigon, Cholon, Haiphong, Pnum-Penh, Tourane and Hanoi. Briefly Saigon is the only port of Cochin China and does normally seventy per cent. of the trade of Indo-China. The commerce of Cochin China, southern Annam, Cambodia and a part of Laos passes through Saigon owing to its steamer connections with foreign countries, thus making a population of nearly 7,000,000 commercially tributary to it. The harbor has docking facilities for thirty-seven large steamers at one time.

Cholon is three and a half miles from Saigon, has a population of about 200,000 of whom 65,000 are Chinese and is the centre of the rice industry.

Haiphong is the port of Tonkin and taps the rich Red River Basin. Commercially dependent on it are Tonkin, northern Annam, northern Laos, and certain portions of Yunnan (China). This city has a wharfage of 1,800 feet with accommodation for four large steamers.

Pnum-Penh, in Cambodia, is located on the four arms formed by the confluence of the Mekong and Tonle-sap Rivers. It is connected with Saigon by river steamer and thus Cambodian rice, cattle and cotton find an outlet through Saigon.

Tourane, the seaport of Annam, does only three per cent. of the foreign trade of Indo-China and principally exports the products of Annam to Saigon and Haiphong for transhipment.

Hanoi is an industrial centre and the seat of the French Government in Indo-China It is more than eighty miles from the sea and its imports and exports are shipped through the port of Haiphong.

Tonkin is the main industrial centre and it is here that the spinning mills are situated. There are three in Tonkin, one at Haiphong, one at Nam Dinh and one at Hanoi.

The French have pushed ahead in railway construction for which an appropriation of 200,000,000 francs was approved by the French Chambers in 1898. At present there are about 820 miles of line opened to traffic and these are:—

Haiphong to Hanoi, 65½ miles; Hanoi to Yunnanfu, 296 miles; Hanoi to Langson and the frontier of Kwangsi, 101½ miles; Hanoi to Vinh, 202½; Tourane to Kwangtri, 108½ miles; Saigon to Mytho, 44 miles; Saigon-Phantiet along the coast of Annam through Phanrang, Bangoi (on Camranh Bay) to Nhatrang, a length of 147 miles. From Phanrang a branch is to be constructed to the plateau of Lang-bian, which is intended to be the future hill-station and sanatorium for Cochin-China This will have a length of 64½ miles. Work is already proceeding on various sections. It is doubtful whether the South Annam coast line will be extended to join the Tourane-Hué iine, and the latter connected up with the Hanoi-Vinh line, thus giving railway communication between Saigon and Hanoi, which was the original intention. At all events many years must elapse before such a programme can be carried out. The proposed lines from the coast of Annam to the Mekong River are also in abeyance at present

The following is the list of principal exporters of French Indo-China:—

Hanoi—
Bazin et Cie.
Denis Freres.
L'Union Commerciale Indochinoise.

Haiphong—
Berthet, Charrierè et Cie.
Denis Freres.
Louis Ogliastro et Cie.
L'Union Commerciale Indochinoise.

Hue and Tourane—
Derobert et Fiard.
L'Union Commerciale Indochinoise.

Saigon—
Berthet, Charriere et Cie.
Compagnie de Commerce et de Navigation d'Extreme-Orient.
Denis Freres.
Wm. G. Hale & Co. (British).
Louis Ogliastro et Cie.
Grammont, Cox & Co.
L'Union Commerciale Indochinoise.
Export & Import Company (Portuguese).

The Bank of Indo-China, with an authorized capital of 36,000,000 francs and reserve and redemption funds amounting to 24,265,000 francs has until 1920 the privilege not only of making advances on security but also of engaging in financial, industrial and commercial enterprise in Indo-China and New Caledonia

The coinage for French Indo-China is silver—piastres, ½ piastres, ⅕ piastres and $\frac{1}{10}$ piastres. Since 1895 the piastre has weighed 27 grams, and the fractional coins in proportion. The piastre and ½ piastre are .900 fine, but the ⅕ and $\frac{1}{10}$ piastre (since 1898) only .835 fine. The piastre is usually worth rather less than 2/-. There are two bronze coins, one equal to the 100th and the other the 375th part of a piastre.

The following are descriptions of the various ports in Indo-China, Annam, and Cochin China:—

Saigon

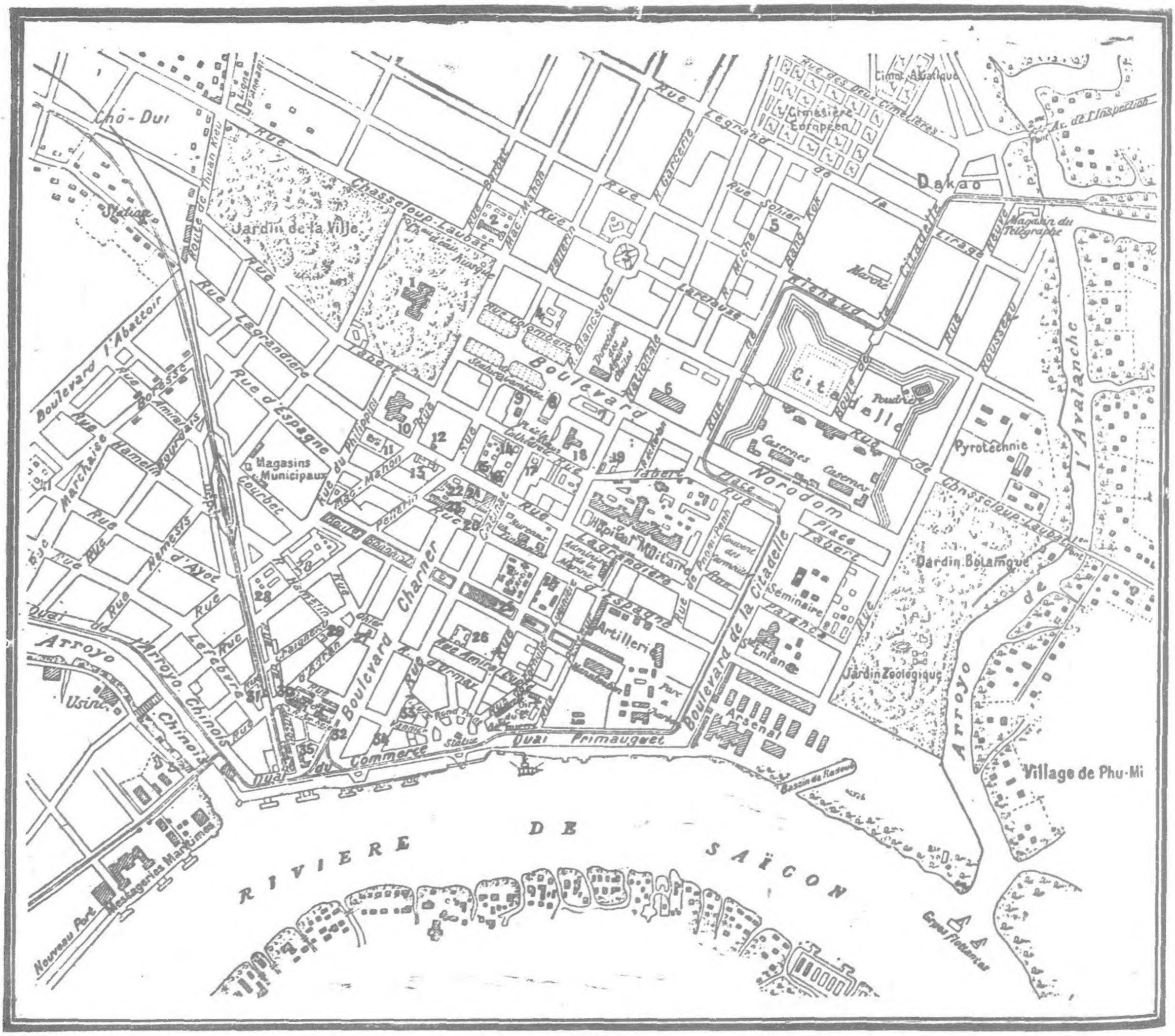
Indo-China possesses two large river ports accessible to ocean traffic—Saigon and Haiphong; two deep water ports—Tourane and Camrang; and a certain number of coast ports of lesser importance.

Saigon extends along both shores of the Saigon River about 45 miles from its mouth in lat. 10 deg. 50 min. N., long. 104 deg. 22 min. E. Saigon is a port of call for vessels from both the north (Japan, China and Tonkin) and the south (Singapore and Europe).

About 24 miles from the sea, the Nhabe, confluent of the Donai, Soirap and Saigon rivers, affords a spacious and deep anchorage, 4 miles long by 1 mile wide. There are found the quarantine hospital, the powder magazines and depots for other dangerous substances, which ships must unload before proceeding to Saigon.

Seven miles from the confluence of the Donai and Saigon rivers is the harbour, which developing along a total length of about 6 kilometres and a width of about 250 metres, presents a water area of about 150 hectares.

The location of Saigon has made of it, both for geographical and economic reasons, the big commercial centre of Cochin-China, Cambodia, lower Laos and Southern Annam. It has the big advantage of being the only point in the whole of Cochin-China that is accessible to modern vessels. The average depth of the stream, from 10 metres to twelve metres at low tide, permits


Cho-Dui
Ligne Dalmann
Rue
Route de Thuan Kieu
Jardin de la Ville
Chasseloup-Laubat
Rue Legrand de la Salle
Rue Mac-Mahon
Rue Pellerin
Rue Lagrandière
Rue d'Espagne
Rue Sohier
Rue Richaud
Rue Catinat
Rue Taberd
Rue Paul Blanchy
Rue Vannier
Rue Lefebvre
Rue Jaccaréo
Rue Testard du Cosquer
Rue Filippini
Rue Courbet
Rue Marchaise
Rue Hamelin
Rue Remesys
Rue d'Ayot
Rue Lagrandière
Rue Legrand de la Salle
Rue Garcerie
Rue Sohier
Rue Richaud
Rue Catinat
Rue Taberd
Rue Paul Blanchy
Rue Vannier
Rue Lefebvre
Rue Jaccaréo
Rue Testard du Cosquer
Rue Filippini
Rue Courbet
Rue Marchaise
Rue Hamelin
Rue Remesys
Rue d'Ayot
Rue Lagrandière
Rue d'Espagne
Rue Pellerin
Rue Mac-Mahon